409

SERVICE MANUAL 2230B

marantz

model 2230B

Stereophonic Receiver

409

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TABLE OF CONTENTS

SECTION		PAGE
1. INTRODUCTION		1
2. SERVICE NOTES		1
3. TEST EQUIPMENT REQUIRED FOR SERVICING		2
4. AM ALIGNMENT PROCEDURE		2
4.1	AM IF Alignment	2
4.2	AM Frequency Range and Tracking Alignment	2
5. FM ALIGNMENT PROCEDURE		3
6. STEREO SEPARATION ALIGNMENT		3
7. MUTING THRESHOLD ADJUSTMENT		3
8. FM DOLBY LEVEL ADJUSTMENT		3
9. POWER AMPLIFIER ADJUSTMENT		3
10. POWER SUPPLY ADJUSTMENT		3
11. MAJOR COMPONENT LOCATIONS		4
11.1	Front Panel Adjustment and Component Locations	4
11.2	Main Chassis Component Locations (Top View)	4
11.3	Rear Panel Adjustment and Component Locations	5
11.4	Main Chassis Component Locations (Bottom View)	5
12. DIAGRAM AND COMPONENT LOCATIONS		6
12.1	FM Front End and AM Tuner Assembly (P100) Schematic Diagram and Component Locations	6
12.2	FM IF Amplifier, Detector, Muting Control and Meter Unit Assembly (P200) Schematic Diagram and Component Locations	8
12.3	MPX Stereo Decoding Amplifier Assembly (P300) Schematic Diagram and Component Locations	9
12.4	Phono Amplifier Assembly (P400) Schematic Diagram and Component Locations	10
12.5	Power Amplifier Assembly (P700) Schematic Diagram and Component Locations	12
12.6	Power Supply Assembly (P800) Schematic Diagram and Component Locations	14
12.7	Dolby FM Set Assembly (PC01) Schematic Diagram and Component Locations	15
12.8	Dial Lamp Assembly (PZ01) Schematic Diagram and Component Locations	16
12.9	Tone Amplifier Assembly (PE01) Schematic Diagram and Component Locations	17
12.10	Filter Assembly (PH01) Schematic Diagram and Component Locations	18
12.11	Loudness, Muting, System 1 and 2 Spkr Switch Assembly (PT01) Schematic Diagram and Component Locations	20
13. BLOCK DIAGRAM		22
14. SCHEMATIC DIAGRAM		23
15. CIRCUIT DIAGRAM		25
16. EXPLODED MECHANICAL DIAGRAM		27
17. PARTS LIST		29
18. TECHNICAL SPECIFICATIONS		39
19. PACKING		41
SERVICE INFORMATION FOR EUROPEAN MODEL		42

1. INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 2230B Stereophonic Receiver.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operations in the receiver.

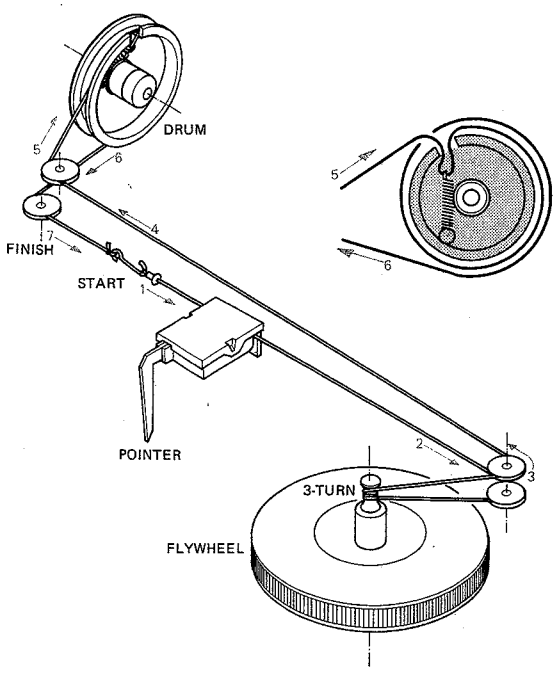
The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can usually be obtained through local suppliers.

2. SERVICE NOTES

As can be seen from the circuit diagram, the chassis of Model 2230B consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1.	FM Front End & AM Tuner	mounted on P.W.B. P 100
2.	FM IF Amplifier, Detector, Muting Control	mounted on P.W.B. P 200
3.	MPX Stereo Decoding Amplifier	mounted on P.W.B. P 300
4.	Phono Amplifier	mounted on P.W.B. P 400
5.	Tone Amplifier	mounted on P.W.B. PH01
6.	DOLBY FM, TAPE Monitor, Mono, High Filter Switch Unit	mounted on P.W.B. PH01
7.	Loudness, Muting, System 1 and System 2 Spkr Switch Unit	mounted on P.W.B. PT01
8.	Power Amplifier	mounted on P.W.B. P 700
9.	Power Supply	mounted on P.W.B. P 800
10.	Dial Lamp Unit	mounted on P.W.B. PZ01
11.	Dolby FM Set Assembly	mounted on P.W.B. PC01

Dial Stringing



3. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the Modell 2230B Receiver.

Item	Manufacturer and Model No.	Use
AM Signal Generator		Signal source for AM alignment
Test Loop		Use with AM Signal Generator
FM Signal Generator MPX Signal Generator	Sound Technology Model 1000A	Signal source for FM alignment Stereo separation alignment and trouble shooting
Distortion Analyzer Audio Oscillator AC VTVM	Sound Technology Model 1700A	Distortion measurements Sinewave and squarewave signal source Voltage measurements (AC)
Oscilloscope	Tektronix Model T932 Philips Model 3232	Waveform analysis and trouble shooting and ASO alignment
Frequency Counter	Fluke Model 1900A	MPX Oscillator adjustment (VCO)
Circuit Tester		Trouble shooting
DC VTVM	Fluke Model 8000 "Digital" Simpson Model 313, Triplet Model 801	Voltage measurements (DC)
AC Wattmeter	Simpson Model 1379	Monitors primary power to amplifier
AC Ammeter	Commercial Grade (1-10A)	Monitors amplifier output under short circuit condition
Line Voltmeter	Simpson Model 1359	Monitors potencial of primary power to amplifier
Variable Autotransformer	Superior Electronic Co., Powerstat Model 116B—10A	Adjusts level of primary power to amplifier
Shorting Plug	Use phono plug with 600 ohm across center pin and shell	Shorts amplifier input to eliminate noise pickup
Output Load (8 ohms, 0.5%, 100W)	Commericial Grade	Provides 8-ohm load for amplifier output termination
Output Load (4 ohms, 0.5%; 100W)	Commercial Grade	Provides 4-ohm load for amplifier output termination

4. AM ALIGNMENT PROCEDURE

4.1 AM IF ALIGNMENT

1. Connect a sweep generator to the J106 and an alignment scope to the resistor R120 (outside).
2. Rotate each core of IF transformers L110 and L111 for the maximum height and flat top symmetrical response.

4.2 AM FREQUENCY RANGE AND TRACKING ALIGNMENT

1. Set AM signal generator to 515 kHz. Turn the tuning capacitor fully closed (place the tuning pointer at the low end) and adjust the oscillator coil L109 for maximum audio output.
2. Set the signal generator to 1650 kHz. Place the tuning pointer in the high frequency end and adjust the oscillator trimmer on the oscillator tuning capacitor for maximum audio output.
3. Repeat steps 1 and 2 until no further adjustment is necessary.
4. Set the generator to 600 kHz, tune the receiver to the same frequency and adjust a slug core of AM ferrite rod antenna and RF coil L108 for maximum output.
5. Set the generator to 1400 kHz and tune the receiver to the same frequency and adjust both trimming capacitor of antenna and RF tuned circuit for maximum output.
6. Repeat procedures 4 and 5 until no further adjustment is necessary.

NOTE: During tracking alignment reduce the signal generator output as necessary to avoid AGC action.

5. FM ALIGNMENT PROCEDURE

1. Connect an FM signal generator to the FM antenna terminals and an oscilloscope and an audio distortion ,analyzer to the tape output jack on the rear panel.
2. Set the FM SG to 87 MHz and provide about 3 to 5μV. Place the tuning pointer at the low frequency end by rotating the tuning knob and adjust the core of oscillator coil L104 to obtain maximum audio output.
3. Set the FM SG to 109 MHz and provide about 3 to 5μV. Rotate the tuning knob and place the tuning pointer at the high frequency end and adjust the trimming capacitor C118 for maximum output.
4. Repeat steps 2 and 3 until no further adjustment is necessary.
5. Set the FM SG to 90 MHz and tune the receiver to the same frequency. Decrease signal generator output until the audio output level decreases with the decreasing generator output. Adjust the ANTENNA coil L101, RF coil L102 and L103 and IF transformer L105 for minimum audio distortion.
6. Set the FM SG to 106 MHz and tune the receiver to the same frequency. Decrease the signal generator output until the audio output level decreases with the decreasing generator output. Adjust the trimming capacitors of ANTENNA and RF tuning circuits for minimum distortion.
7. Repeat steps 5 and 6 until no further adjustment is necessary.
8. Adjust the secondary core (black) of discriminator transformer L201 so that the center tuning meter pointer indicates its center at no signal applied. Set the FM SG to 98 MHz and increase its output level 1 KμV and tune the receiver to the same frequency so that the center tuning meter pointer indicates its center.

   Adjust the primary core (pink) of L201 for minimum distortion, and adjust the L202 for the maximum deflection of FM signal strength meter M001.

6. STEREO SEPARATION ALIGNMENT

1. Set the FM SG to provide 1 KμV at 98 MHz. Tune the receiver to the same frequency so that the center tuning meter pointer indicates its center. Then turn off the modulation of the FM SG, connect a frequency counter to test point R312 and adjust R304 so that the frequency counter may precisely read 19 kHz.
2. Modulate the FM SG with stereo composite signal consisting of only L or R channel (of course a pilot signal must be included).
3. Adjust the trimming resistor R303 for maximum and same separation in both channels.

7. MUTING THRESHOLD ADJUSTMENT

Set the FM SG output to provide 12.5μV (IHF) at 98 MHz and tune receiver to the same frequency. Adjust the trimming resistor R253 for the threshold level of 12.5μV. (During this adjustment turn the MUTING pushswitch "on".)

8. FM DOLBY LEVEL ADJUSTMENT

1. Set the FM SG to provide a 400Hz, 50% modulated 98 MHz mono signal, at 1 KμV output. Precisely tune the receiver to 98 MHz.
2. Depress the FM DOLBY pushswitch, and adjust RC01 and RC02 until the outputs of both channels are 580mV.

9. POWER AMPLIFIER ADJUSTMENT

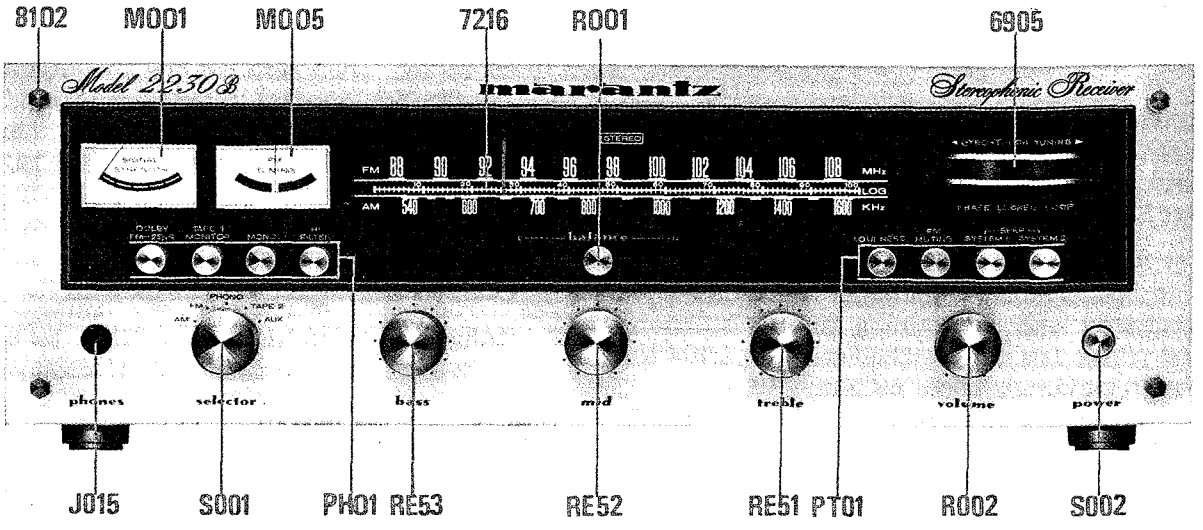
Connect a VTVM between J712(+) and J718 (—) and adjust the trimming resistor R733 until the VTVM reads 20 mV DC. And next, connect a VTVM between J723 and J722 (GROUND) and adjust the trimming resistor R711 until the VTVM reads 0 mV DC. Do over again. For the other channel, connect the VTVM between J713(+) and J719(—) and adjust the R734 for the same reading, and connect the VTVM between J724 and J722 and adjust the R712 for the same reading. Do over again.

10. POWER SUPPLY ADJUSTMENT

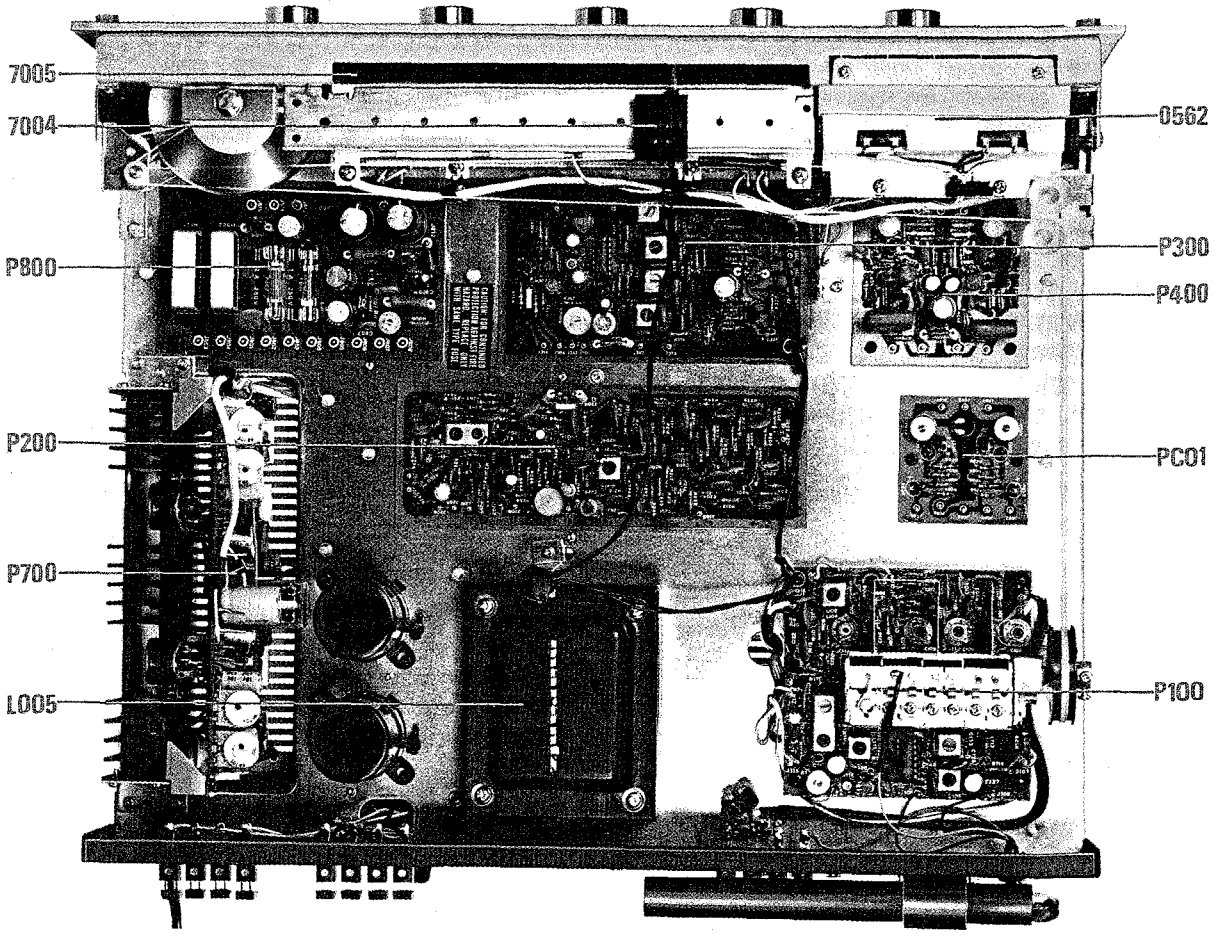
Connect a VTVM between J812(+) and J811(—) and adjust R808 until the VTVM reads 35.0 V under no signal condition.

11. MAJOR COMPONENT LOCATIONS

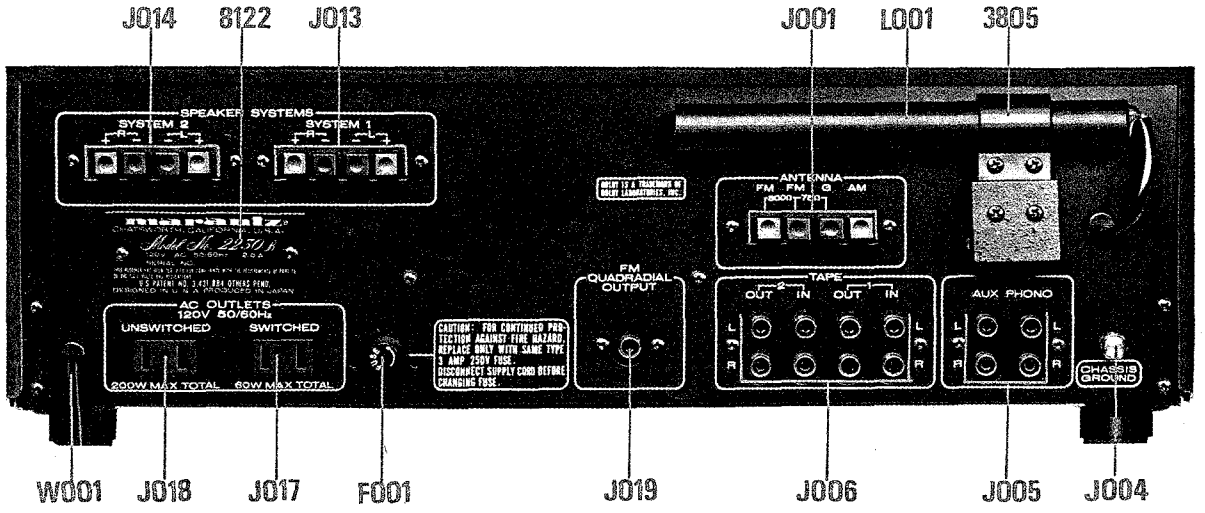
11.1 FRONT PANEL ADJUSTMENT AND COMPONENT LOCATIONS



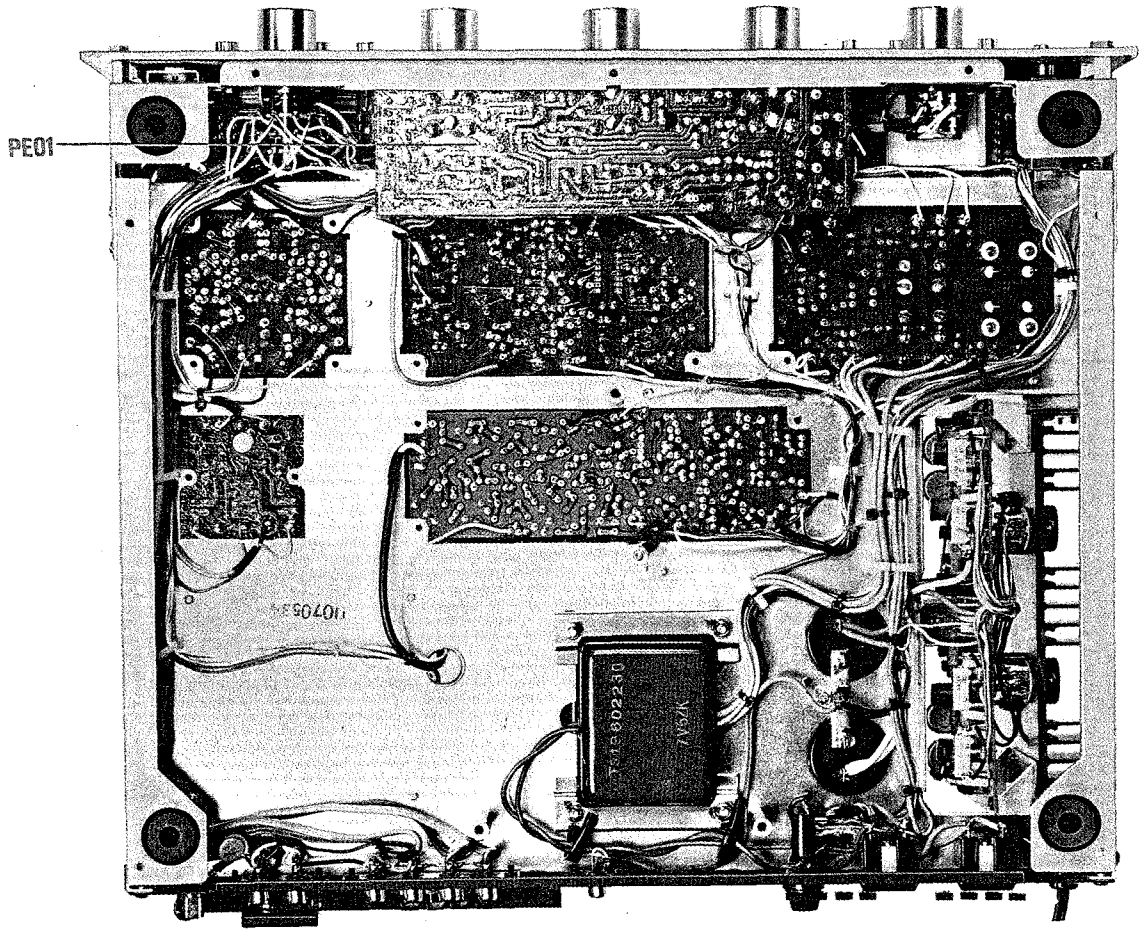
11.2 MAIN CHASSIS COMPONENT LOCATIONS (TOP VIEW)



11.3 REAR PANEL ADJUSTMENT AND COMPONENT LOCATIONS

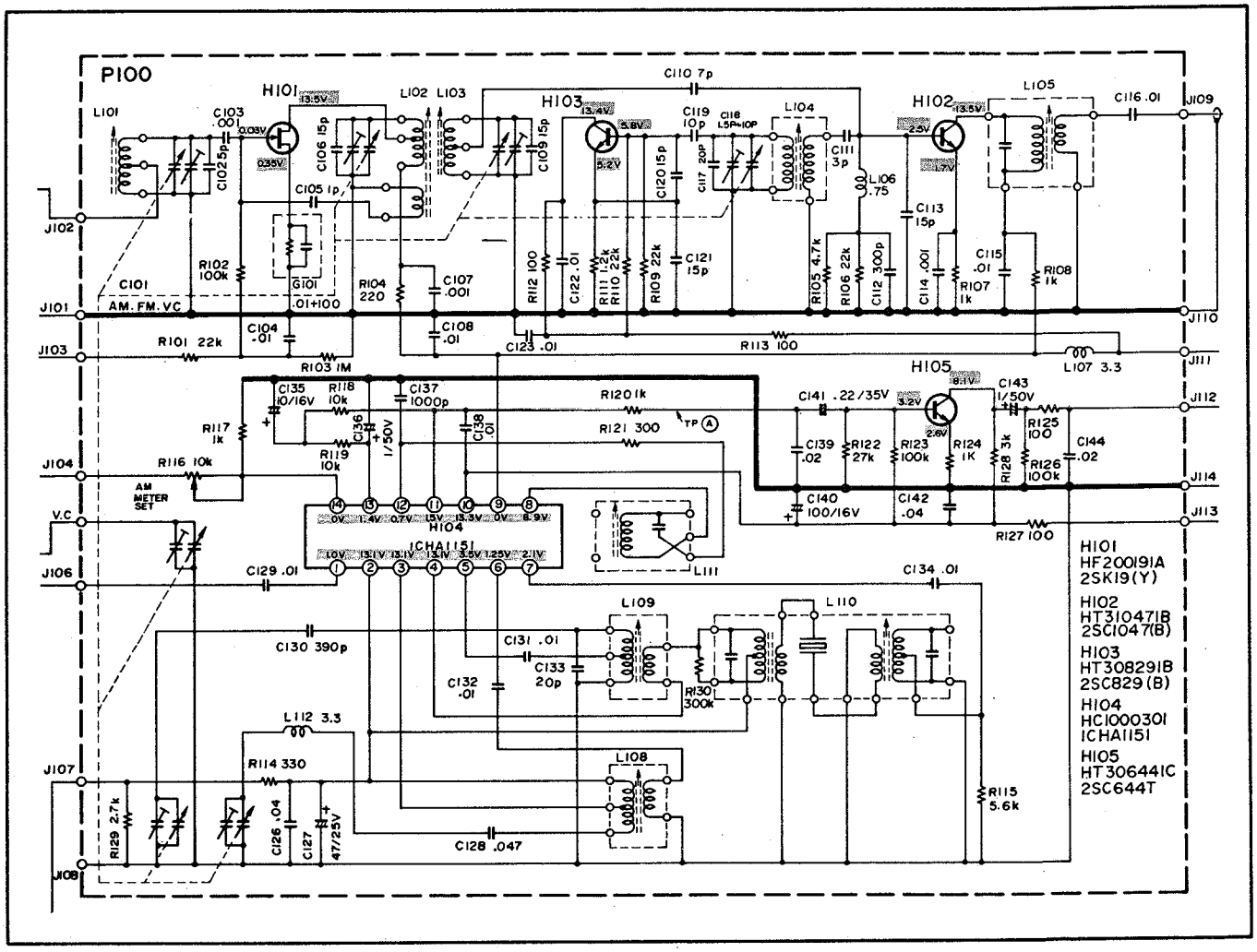


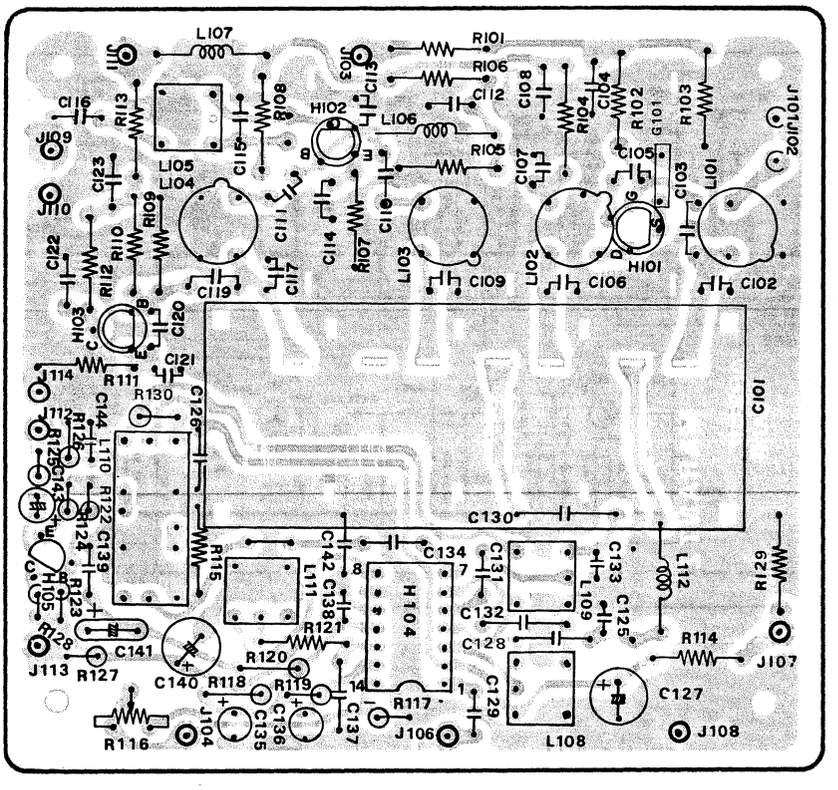
11.4 MAIN CHASSIS COMPONENT LOCATIONS (BOTTOM VIEW)



12. DIAGRAM AND COMPONENT LOCATIONS

12.1 FM FRONT END AND AM TUNER ASSEMBLY (P100) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS




L107
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C112
C108
R104
C104
R102
G101
R103
J101
J102
C116
R113
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L105
L104
C115
C118
H102
B
E
C
R105
C107
C105
C103
L101
J110
R109
C122
R110
R112
C119
C117
C114
R107
L103
C109
L102
C106
H101
C102
H103
C120
C121
J114
R111
R130
C126
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J112
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C142
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R115
C134
C131
C133
L109
C125
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R123
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J113
R127
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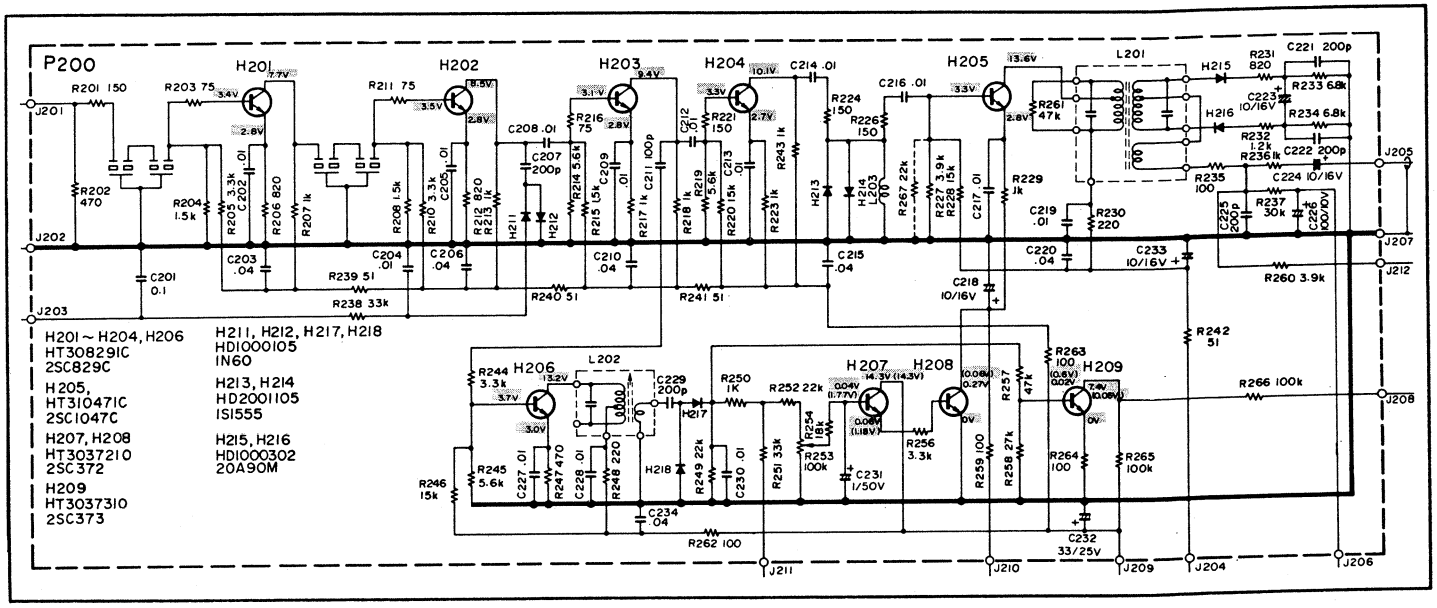
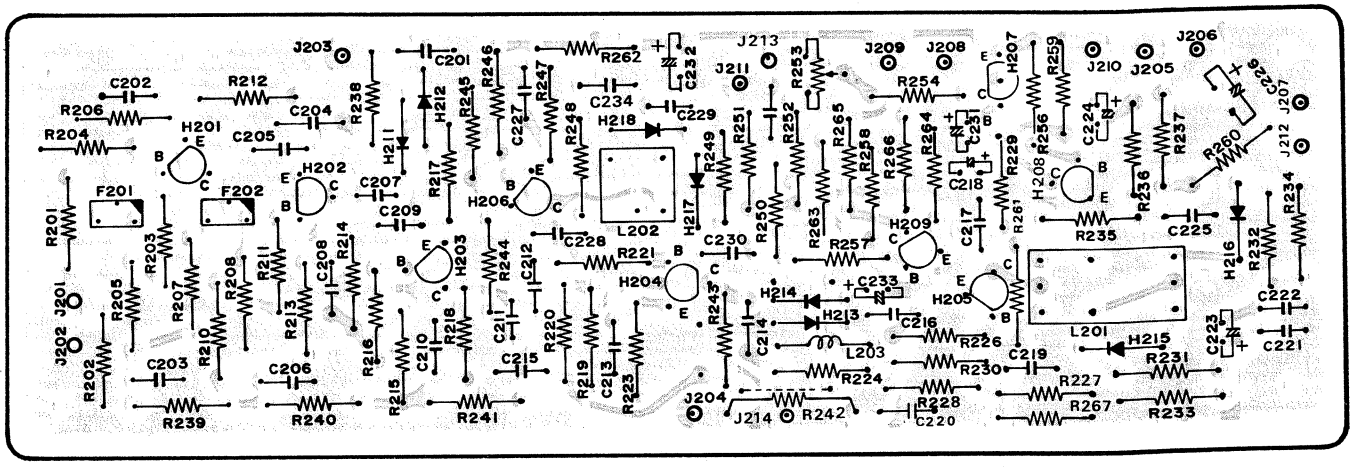
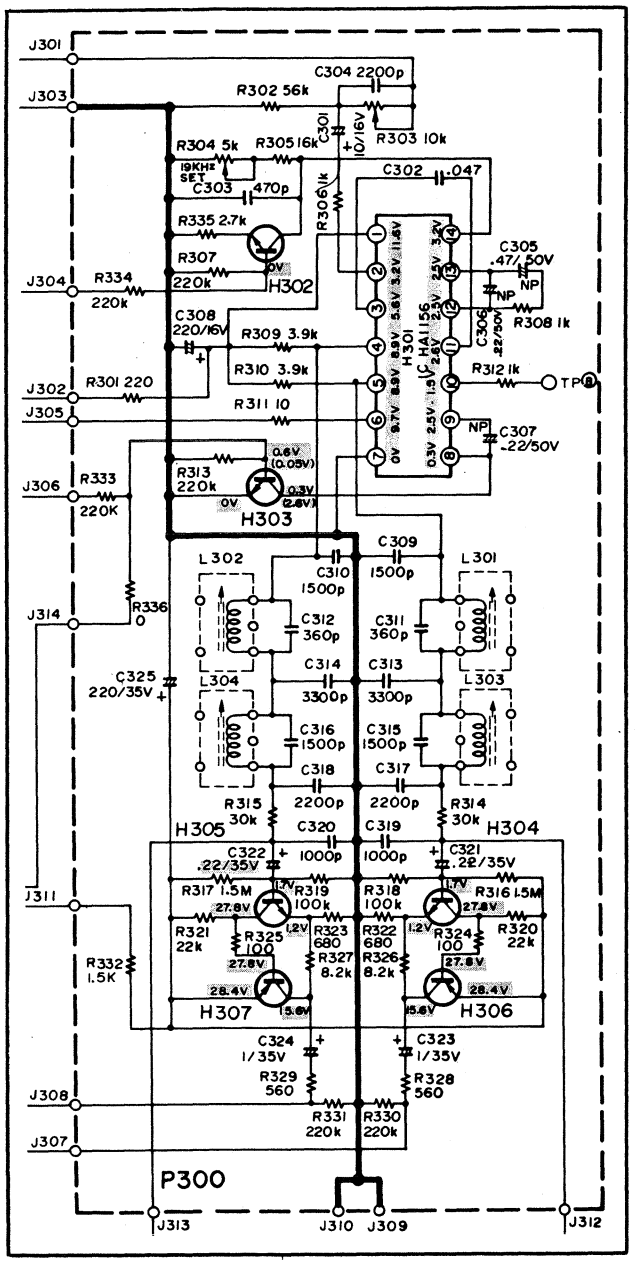
C140
R118
R120
R119
C135
C136
C137
R117
J106
C129
L108
C127
J108
R116
J104
R129

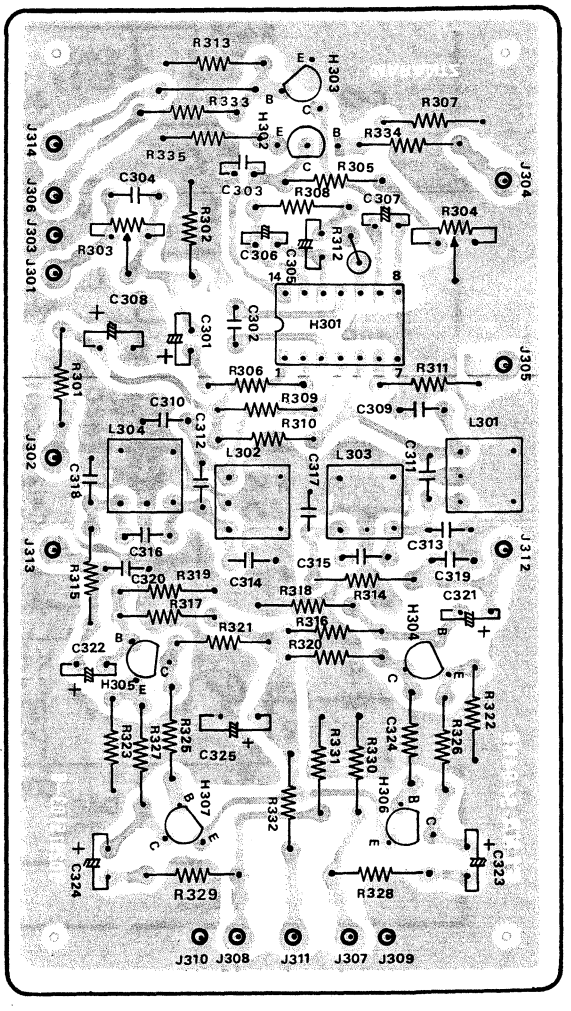
12.2 FM IF AMPLIFIER, DETECTOR, MUTING CONTROL AND METER UNIT ASSEMBLY (P200) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



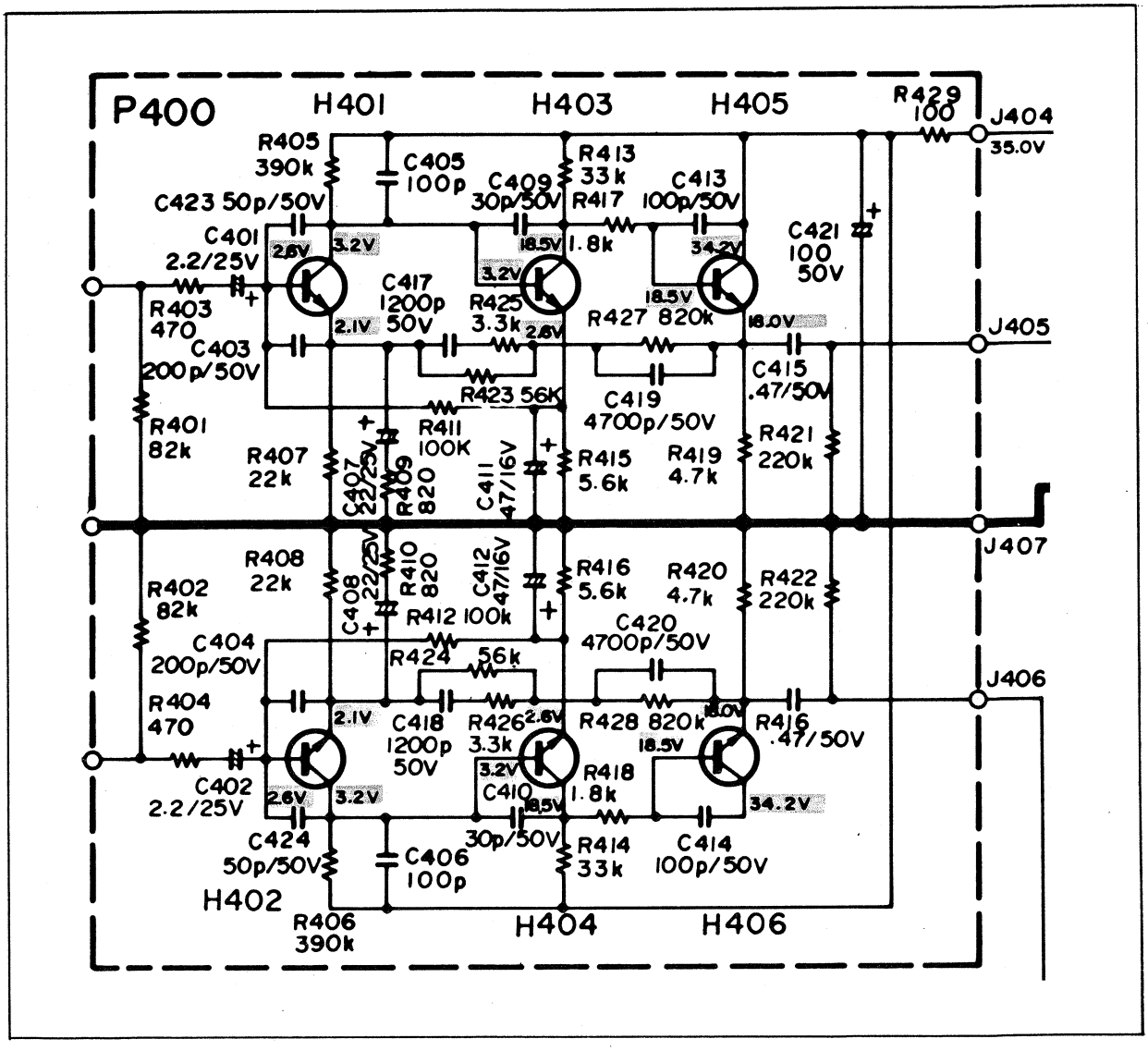


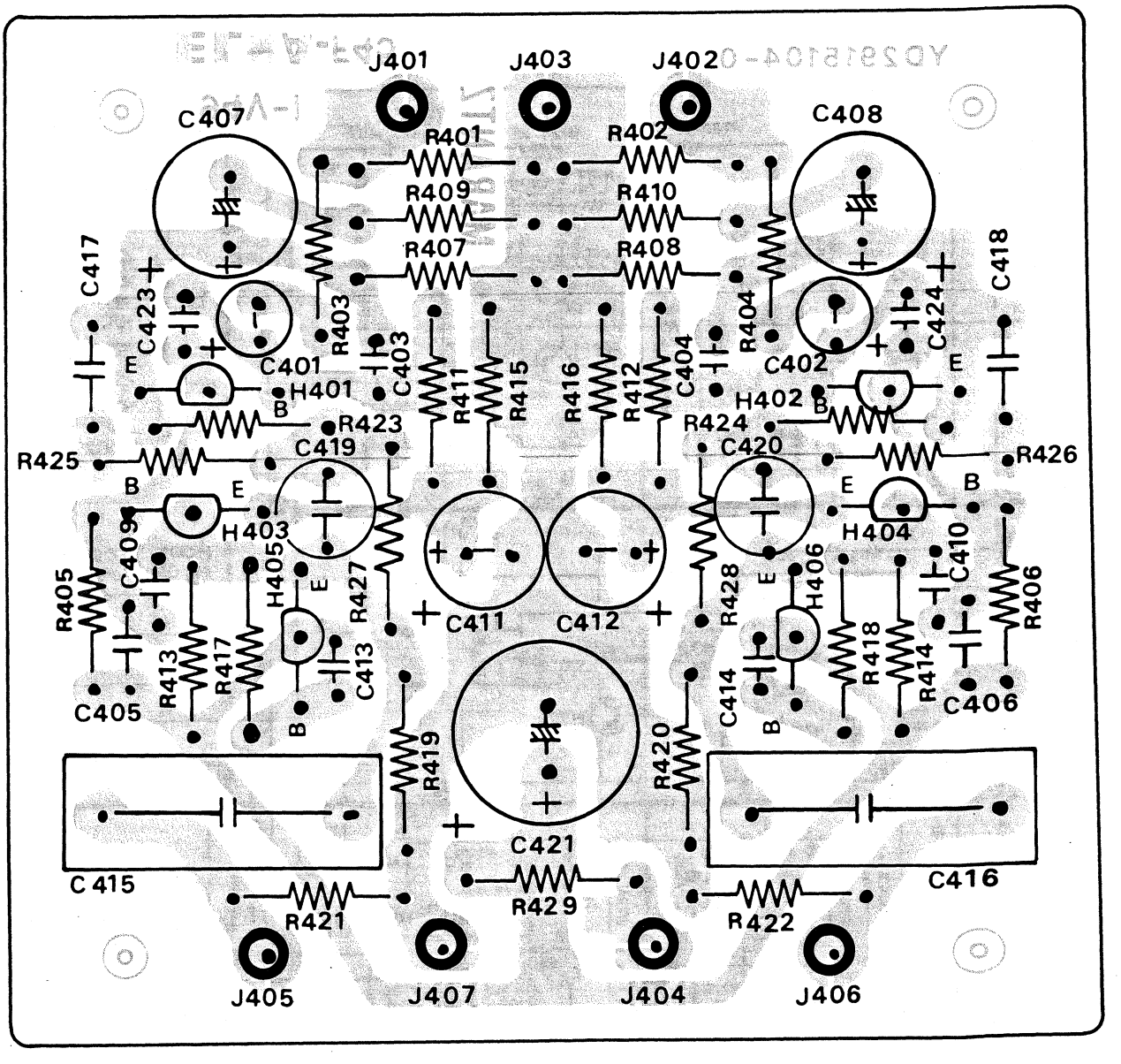
12.3 MPX STEREO DECODING AMPLIFIER ASSEMBLY (P300) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS





12.4 PHONO AMPLIFIER ASSEMBLY (P400) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

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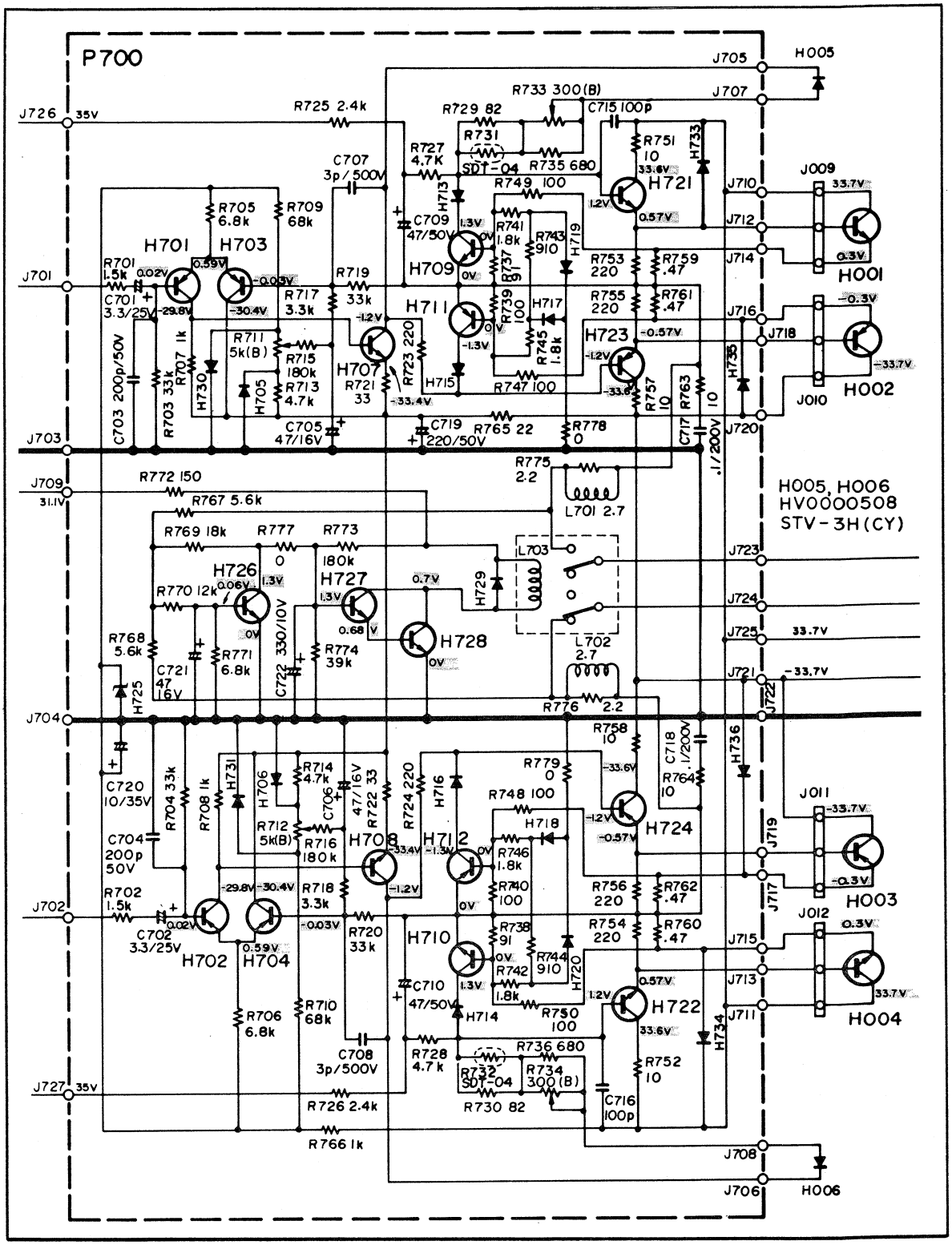
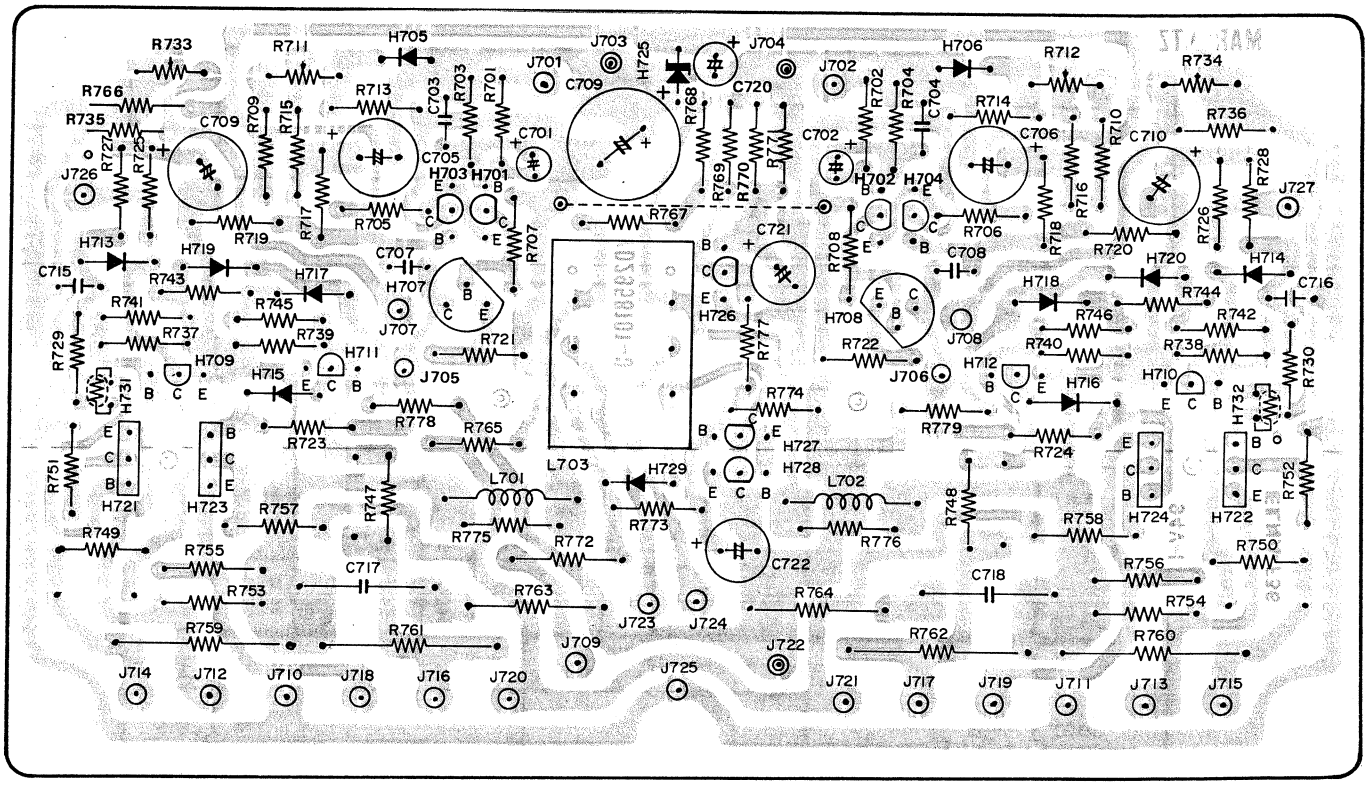
12.5 POWER AMPLIFIER ASSEMBLY (P700) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

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C701
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H703
H701
R767
R706
R718
R716
R726
H713
R719
C721
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H714
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R744
C716
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H707
H726
H708
R746
R742
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J705
R774
R779
H732
B C E
R778
R765
R723
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R724
R751
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L703
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H728
H724
H722
R752
R747
L701
L702
R748
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R776
R775
R772
C722
R749
R755
R750
C717
C718
R756
R753
R763
R764
R754
J723
J724
R759
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J722
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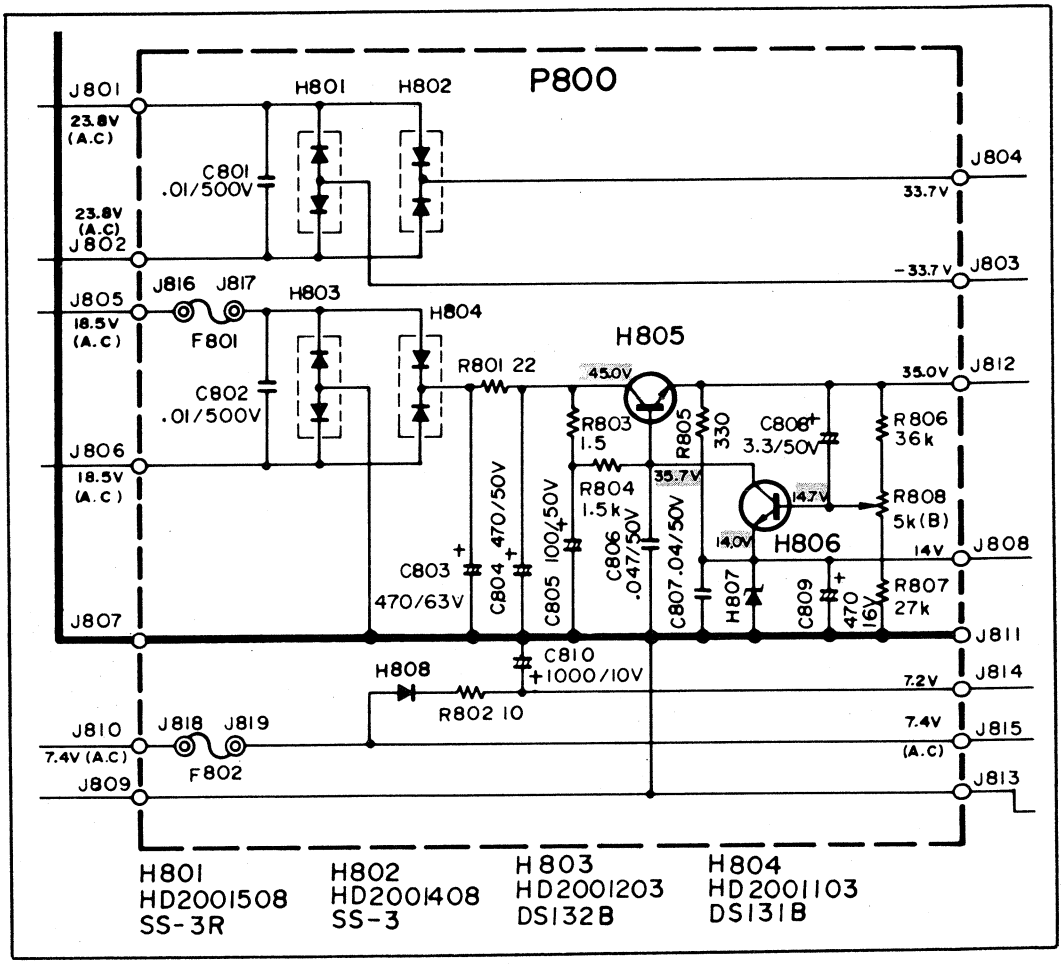
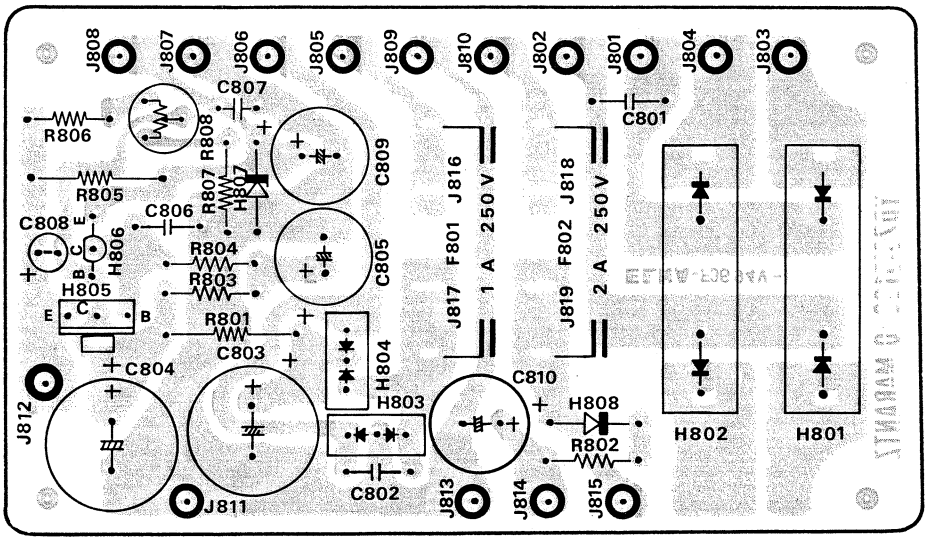
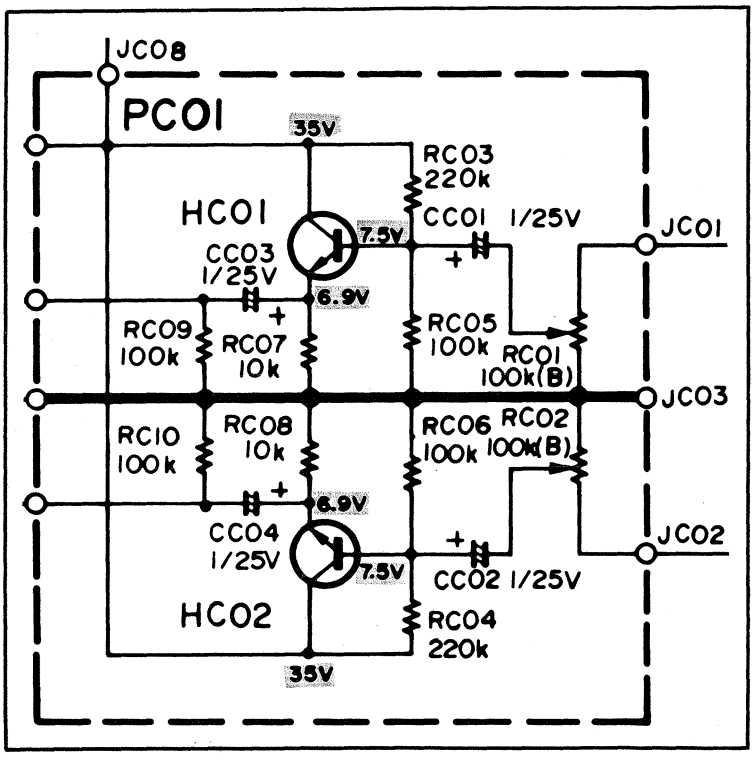
J715

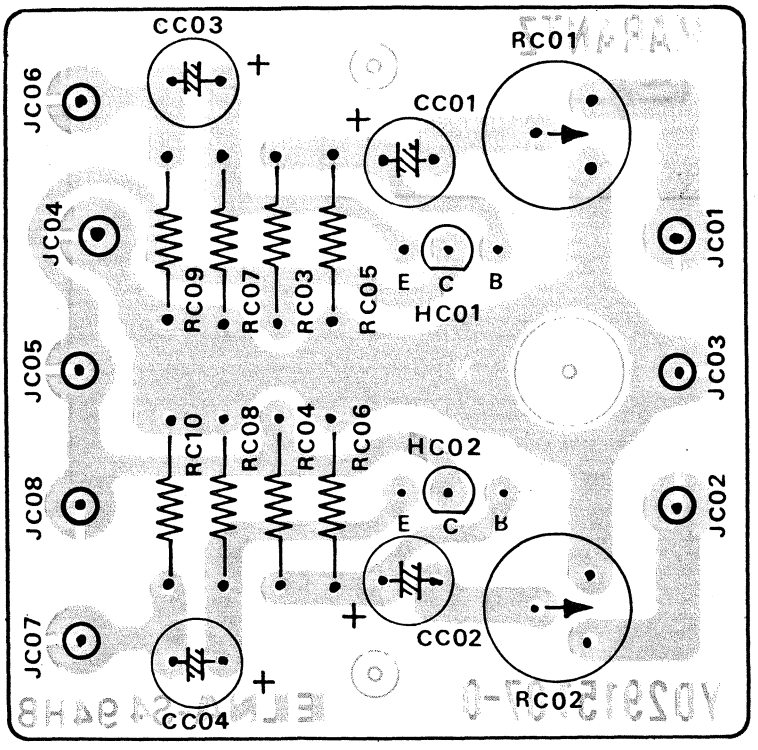
12.6 POWER SUPPLY ASSEMBLY (P800) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



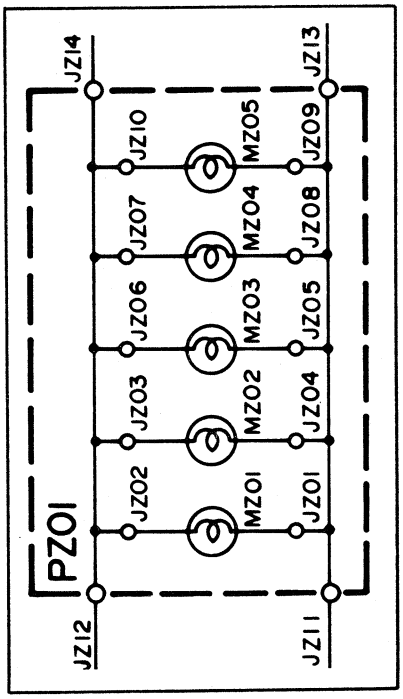


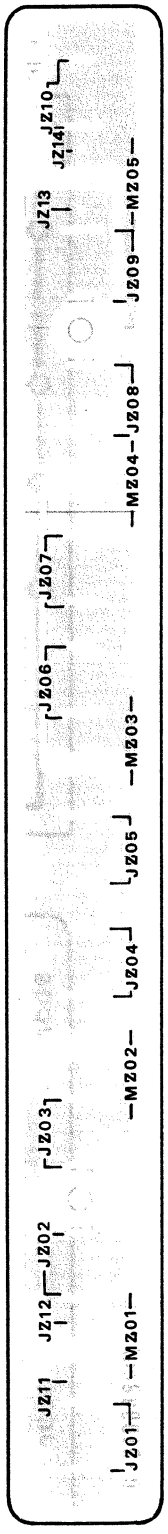
12.7 DOLBY FM SET ASSEMBLY (PC01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



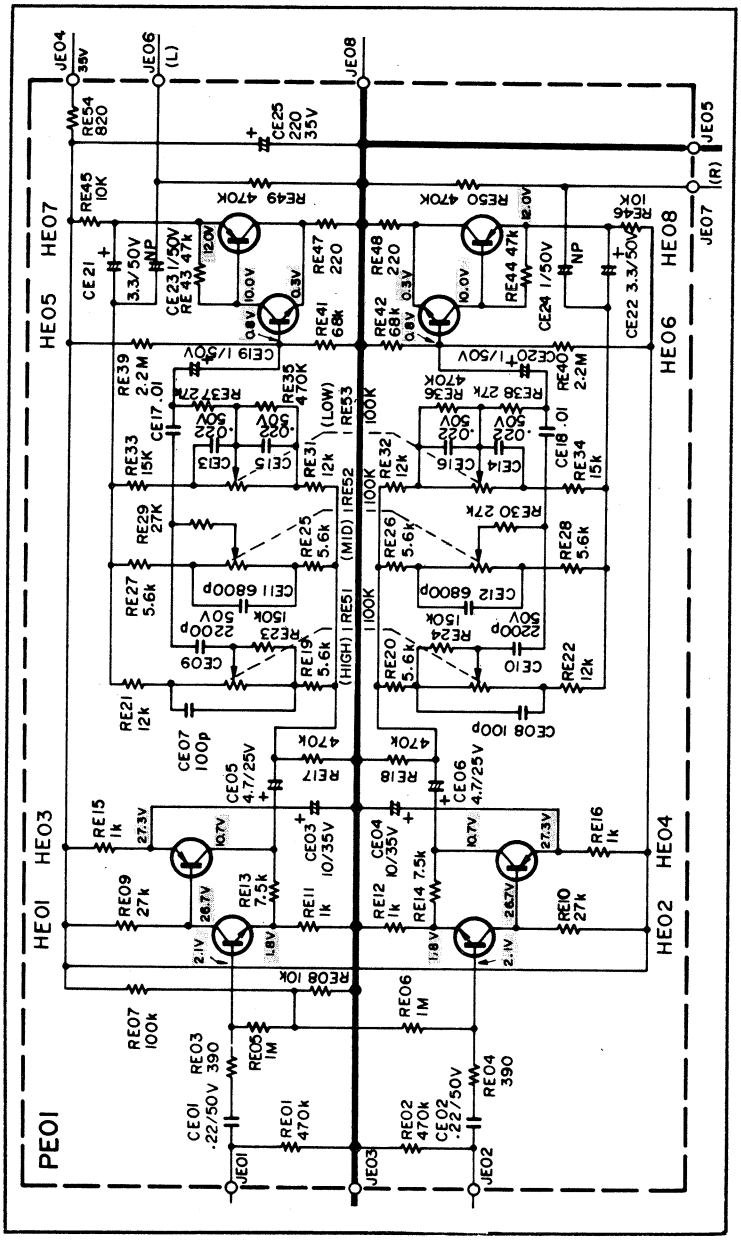


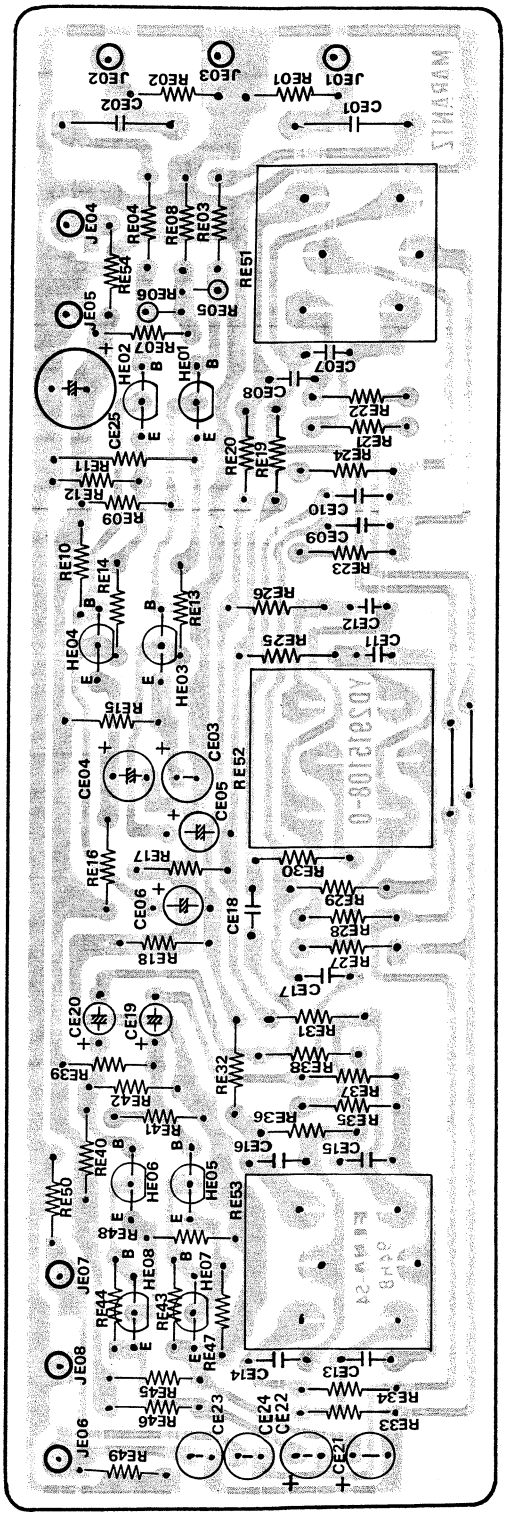
12.8 DIAL LAMP ASSEMBLY (PZ01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS





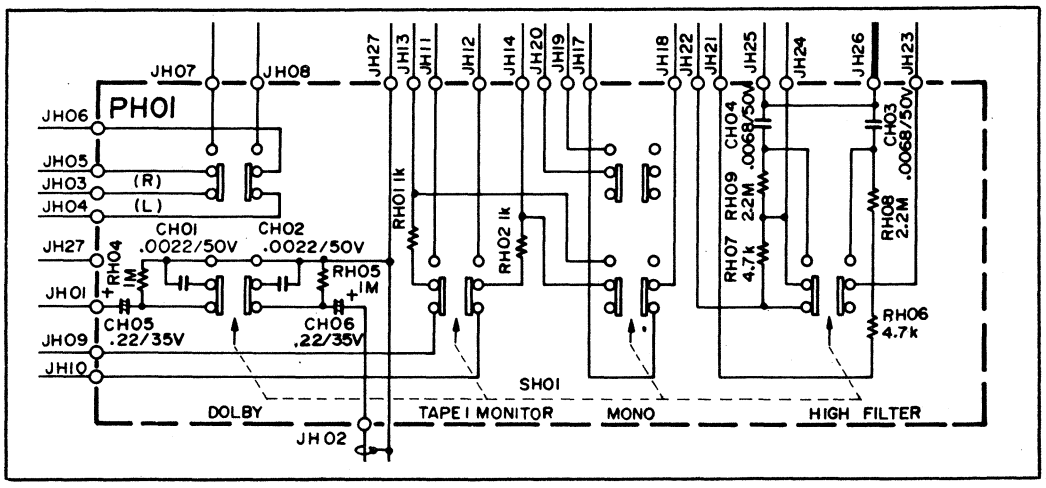
12.9 TONE AMPLIFIER ASSEMBLY (PE01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

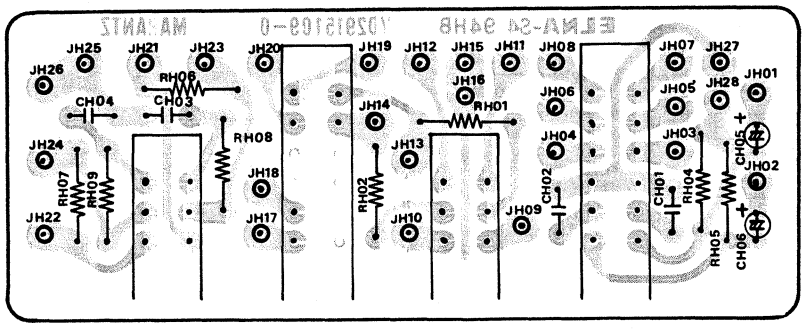




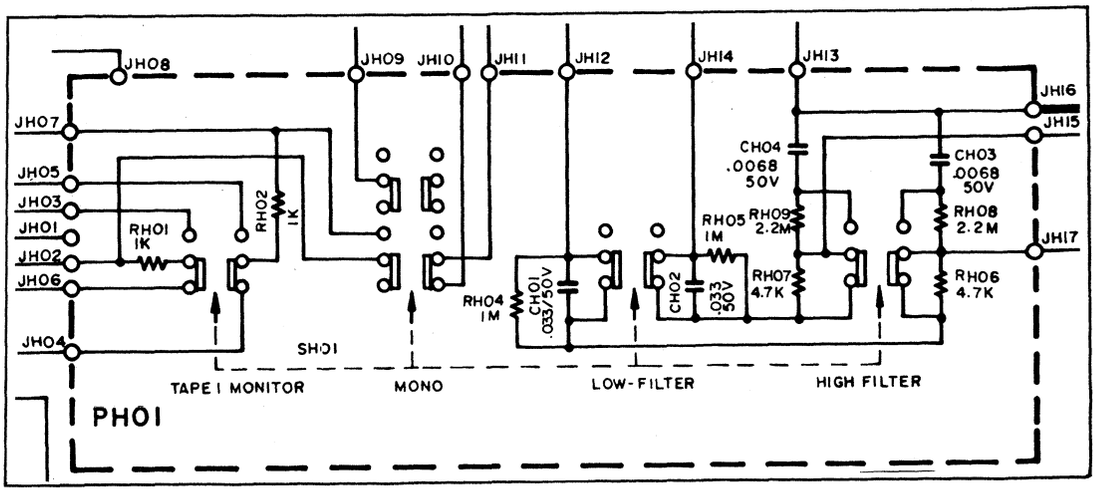
12.10 FILTER ASSEMBLY (PH01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

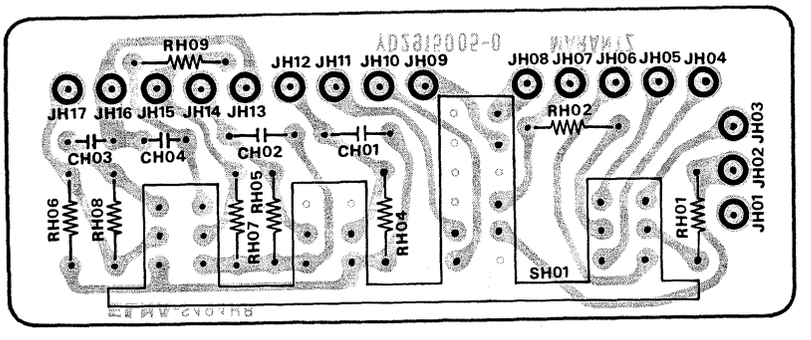
– For U.S.A. & Canadian Model –



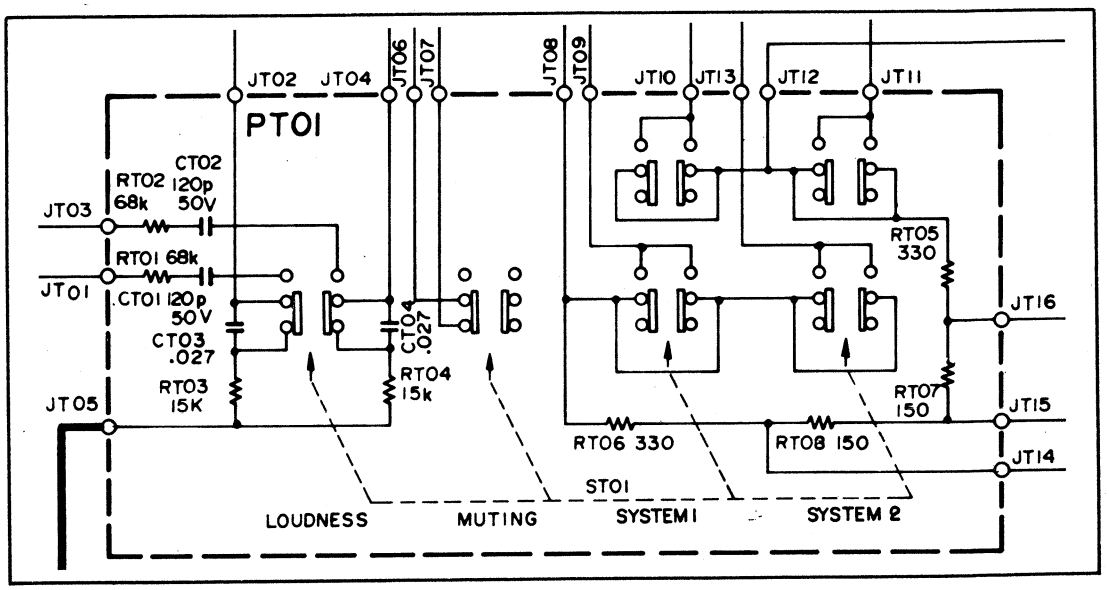


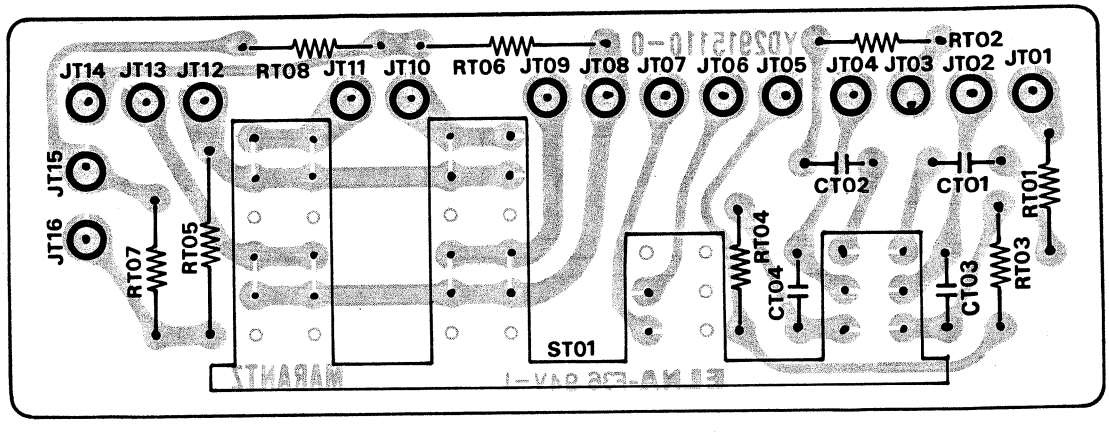
— For European Model —



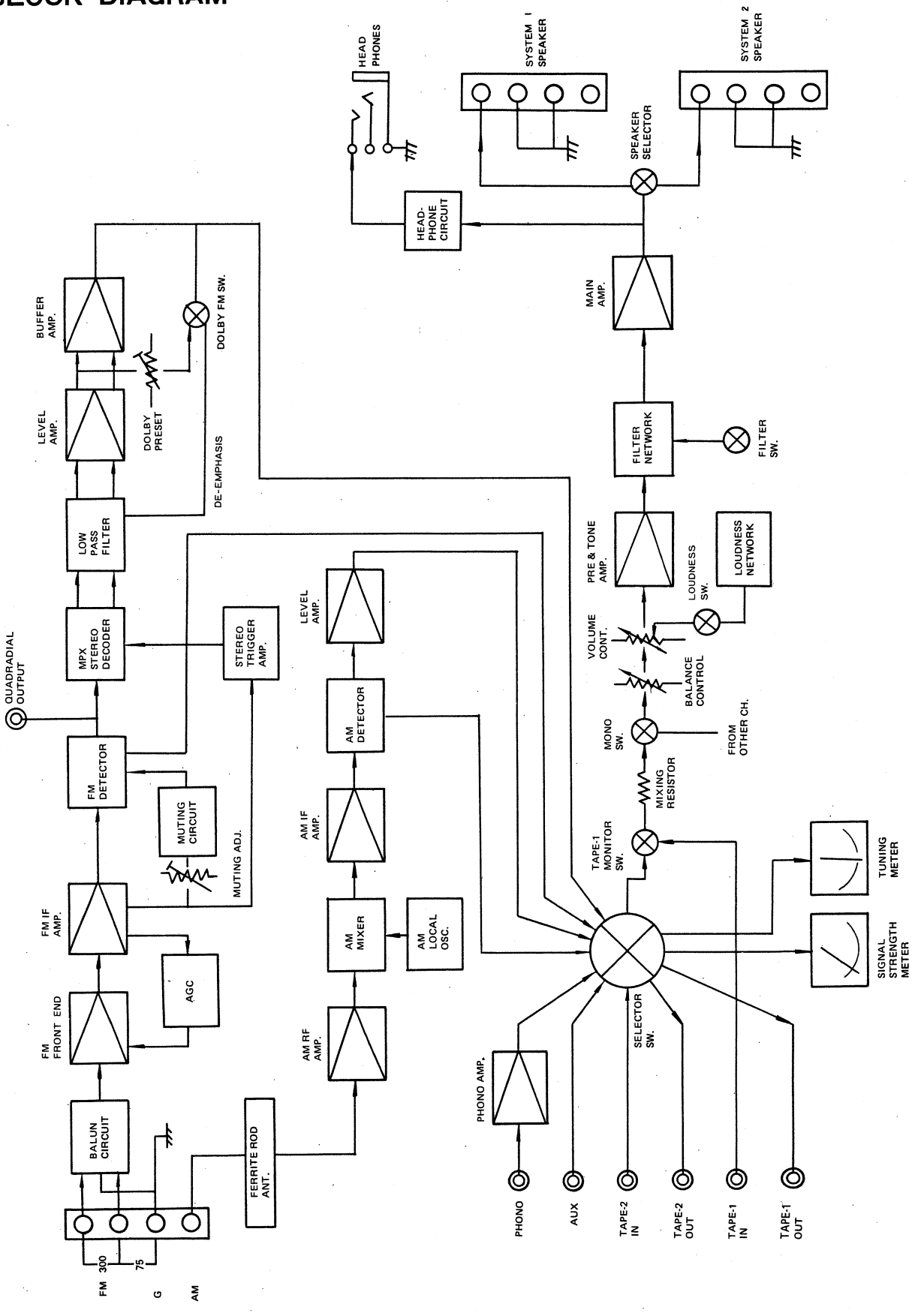


12.11 LOUDNESS, MUTING, SYSTEM 1 AND 2 SPKR SWITCH ASSEMBLY (PT01) SHCEMATIC DIAGRAM AND COMPONENT LOCATIONS

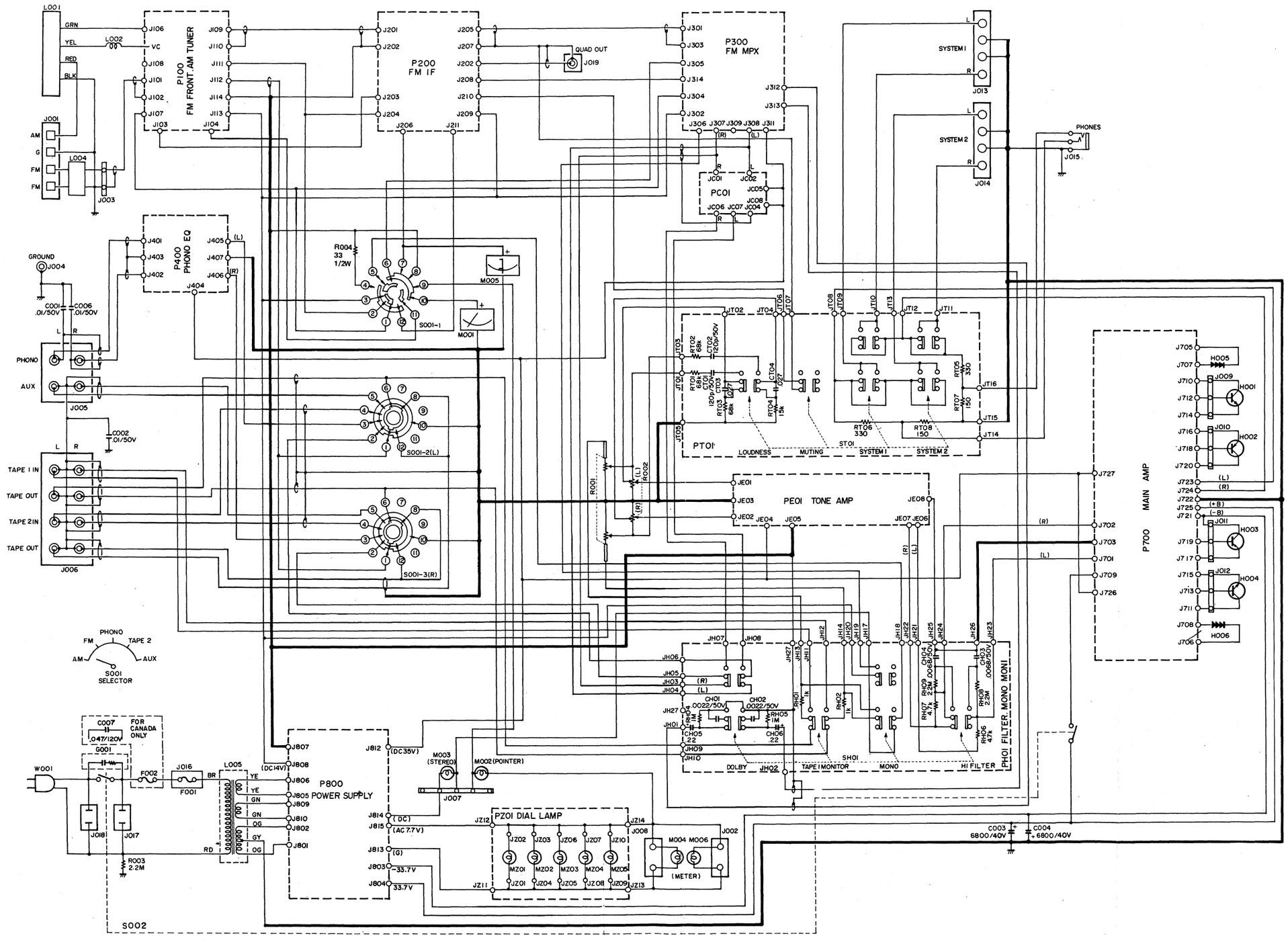




13. BLOCK DIAGRAM



14. SCHEMATIC DIAGRAM



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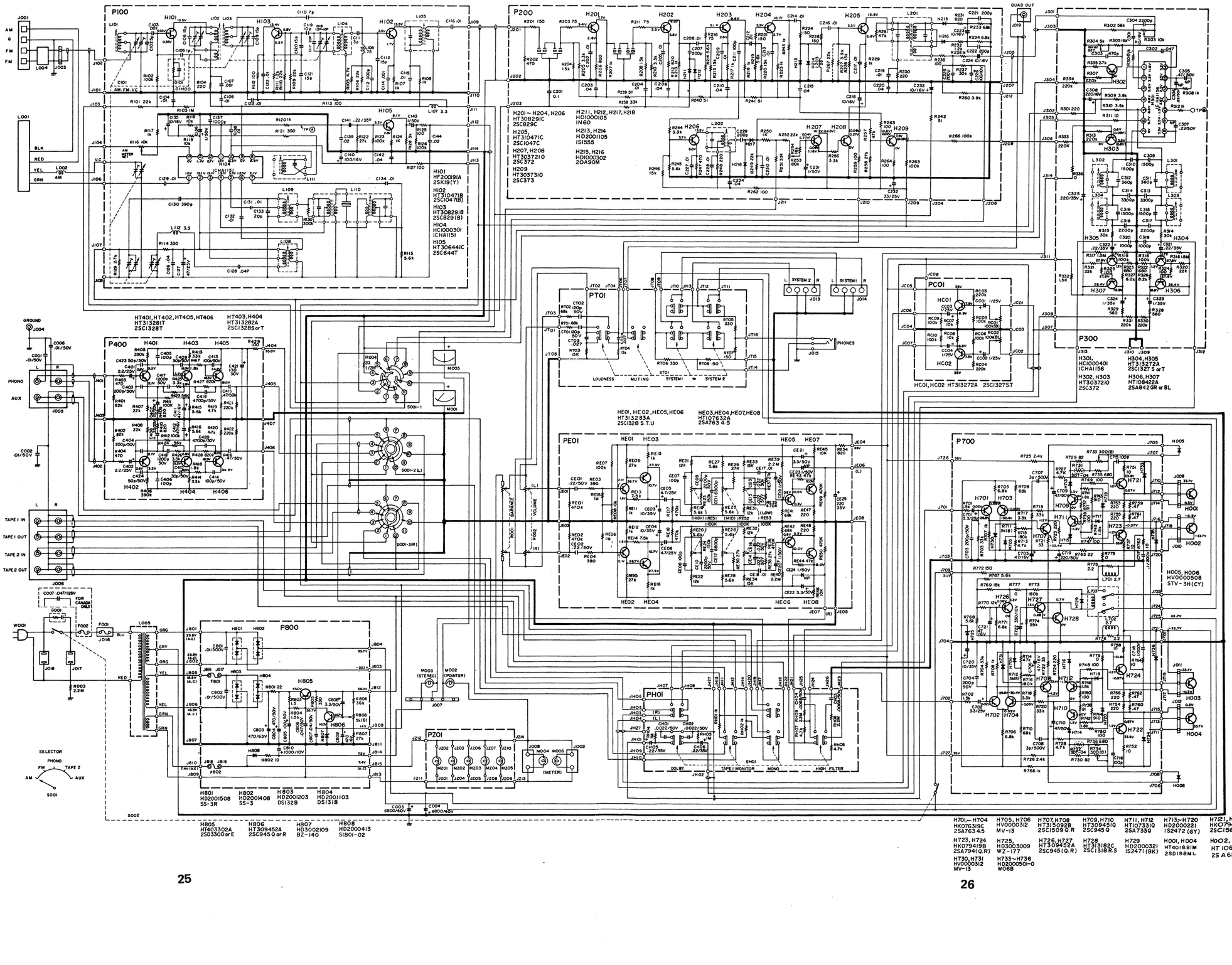
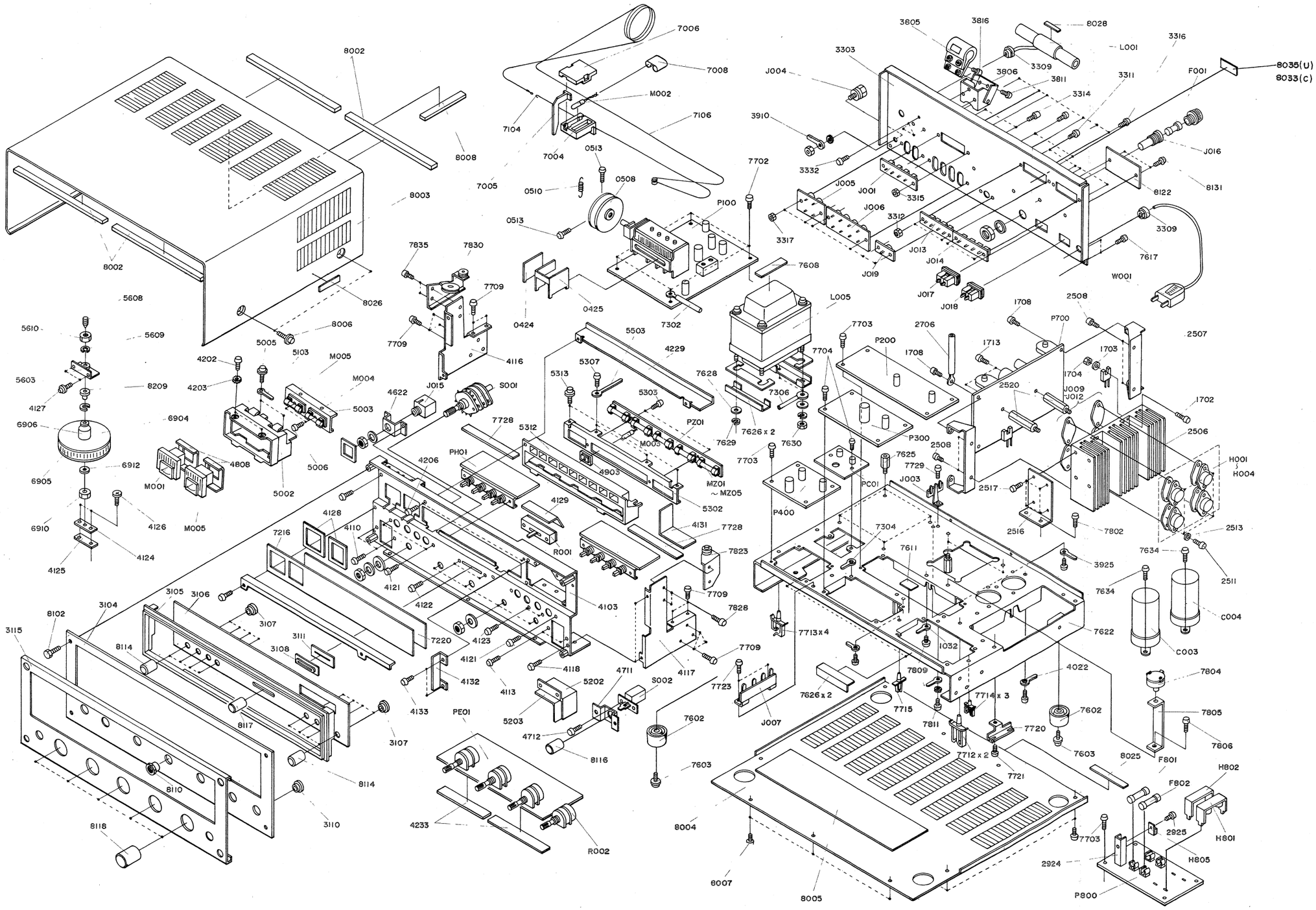
15. CIRCUIT DIAGRAM

– For U.S.A. & Canadian Model –

Model 2230B



16. EXPLODED MECHANICAL DIAGRAM



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17. PARTS LIST

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
A	1	1		2222063400	Front Panel Assembly
A1			1	2222063410	Front Panel Assembly
3104	1	1	1	2222063013	Escutcheon
3105	1	1	1	2853401016	Frame
3106	1	1		2222158010	Window
3107	8	8	8	2886259010	Bushing
3108	1	1	1	2854259012	Bushing
3109			1	2222158020	Window
3110	1	1	1	2818259050	Bushing
3111	1	1	1	2915107010	Sheet
3115	1	1	1	2915053010	Cover
B	1	1	1	2853273400	Flywheel Assembly
6904	2	2	2	2577063022	Escutcheon
6905	1	1	1	2577273010	Flywheel
6906	1	1	1	2853112010	Shaft
6910	1	1	1	53110603E9	Hexagon Nut
6912	1	1	1	54020601E0	Flat Washer
C	1	1	1	2915103400	pointer Assembly
7004	1	1	1	2915103012	Pointer
7005	1	1	1	2818103020	Pointer
7006	1	1	1	2915103020	Pointer
7008	1	1	1	2915267030	Heatsink
M002	1	1	1	IN10080300	Lamp
D	1	1	1	1202006430	Hook Assembly
7104	1	1	1	1202258010	Hook
7106	1	1	1	72071605A0	String
E	1	1	1	2819159430	Drum Assembly
0508	1	1	1	2819159012	Drum
0510	1	1	1	71101689L0	Spring
0513	2	2	2	51064019A9	Set Screw
F			1	2222160400	Rear Panel Assembly
3304			1	2222160220	Bracket
3402			1	2821259010	Bushing
3404			2	54050300R0	T.L. Washer
3406			2	55060305S0	T.R. Rivet
G	1	1	1	2818257420	Lid Assembly, Upper
8002	4	4	4	2577118070	Spacer
8003	1	1	1	2818257110	Lid
H	1	1	1	2818257410	Lid Assembly
8004	1	1	1	2818257022	Lid
8005	1	1	1	2915120010	Insulator

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
					P100 FRONT END BOARD
P100	1	1	1	YD29151012	P.W. Board
	1	1		ZZ29153010	P.W. Board Assembly
			1	ZZ29158030	P.W. Board Assembly
G101	1	1	1	BF10300030	Printed Cap., 0.01μF // 100Ω
R101	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R102	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
R103	1	1	1	RT05105140	Resistor, 1MΩ ±5% ¼W
R104	1	1	1	RT05221140	Resistor, 220Ω ±5% ¼W
R105	1	1	1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
R106	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R107	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R108	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R109	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R110	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R111	1	1	1	RT05122140	Resistor, 1.2kΩ ±5% ¼W
R112	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R113	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R114	1	1	1	RT05331140	Resistor, 330Ω ±5% ¼W
R115	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
R116	1	1	1	RA01030200	Trimming Resistor, 10kΩ
R117	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R118	1	1	1	RT05103140	Resistor, 10kΩ ±5% ¼W
R119	1	1	1	RT05103140	Resistor, 10kΩ ±5% ¼W
R120	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R121	1	1	1	RT05301140	Resistor, 300Ω ±5% ¼W
R122	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
R123	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
R124	1	1	1	RT05102140	Resistor, 1.0kΩ ±5% ¼W
R125	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R126	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
R127	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R128	1	1	1	RT05302140	Resistor, 3kΩ ±5% ¼W
R129	1	1	1	RC10272120	Resistor, 2.7kΩ ±10% ½W
R130	1	1	1	RT05304140	Resistor, 300kΩ ±5% ¼W
C101	1	1	1	CA43300020	Variable Cap., AM FM
C102	1	1	1	DD12050010	Ceramic Cap., 5pF ±10%
C103	1	1	1	DK17102010	Ceramic Cap., 0.001μF ±20%
C104	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C105	1	1	1	DD10010010	Ceramic Cap., 1pF ±0.25pF
C106	1	1	1	DD16150010	Ceramic Cap., 15pF ±10%
C107	1	1	1	DK17102010	Ceramic Cap., 0.001μF ±20%
C108	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C109	1	1	1	DD16150010	Ceramic Cap., 15pF ±10%
C110	1	1	1	DD12070010	Ceramic Cap., 7pF ±1pF
C111	1	1	1	DD11030010	Ceramic Cap., 3pF ±0.5pF
C112	1	1	1	DD15301020	Ceramic Cap., 300pF ±5%
C113	1	1	1	DD16150010	Ceramic Cap., 15pF ±10%
C114	1	1	1	DK17102010	Ceramic Cap., 0.001μF ±20%
C115	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C116	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C117	1	1	1	DD15200020	Ceramic Cap., 20pF ±5%
C118	1	1	1	CT11000080	Trimming Cap., 1.5pF~10pF
C119	1	1	1	DD12100060	Ceramic Cap., 10pF ±1pF
C120	1	1	1	DD16150030	Ceramic Cap., 15pF ±10%
C121	1	1	1	DD16150030	Ceramic Cap., 15pF ±10%
C122	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
C123	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±10% YY
C126	1	1	1	DK18403020	Ceramic Cap., 0.04μF +80 -20 %
C127	1	1	1	EA47602590	Electrolytic Cap., 47μF 25V
C128	1	1	1	DF17473010	Film Cap., 0.047μF ±20%
C129	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C130	1	1	1	DF65391010	Film Cap., 390pF ±5%
C131	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C132	1	1	1	DF17103010	Film Cap., 0.01μF ±20%
C133	1	1	1	DD16200010	Ceramic Cap., 20pF ±10%
C134	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C135	1	1	1	EA10601670	Electrolytic Cap., 10μF 16V
C136	1	1	1	EA10505090	Electrolytic Cap., 1μF 50V
C137	1	1	1	DK17102010	Ceramic Cap., 1000pF ±20%
C138	1	1	1	DF17103010	Film Cap., 0.01μF ±20%
C139	1	1	1	DK17502010	Ceramic Cap., 0.005μF ±20%
C140	1	1	1	EA10701690	Electrolytic Cap., 100μF 16V
C141	1	1	1	EV22403560	Electrolytic Cap., 0.22μF 35V
C142	1	1	1	DK18403020	Ceramic Cap., 0.04μF +80 -20 %
C143	1	1	1	EE10505010	Electrolytic Cap., 1μF 50V
C144	1	1	1	DK16103010	Ceramic Cap., 0.01μF ±10%
H101	1	1	1	HF200191A0	FET, 2SK19 (Y)
H102	1	1	1	HT310471B0	Transistor, 2SC1047 (B)
H103	1	1	1	HT308291B0	Transistor, 2SC829 (B)
H104	1	1	1	HC10003010	IC, HA1151
H105	1	1	1	HT306441C0	Transistor, 2SC644T
L101	1	1	1	LA12028010	Ant. Coil
L102	1	1	1	LA12028020	RF Coil
L103	1	1	1	LA12028030	RF Coil
L104	1	1	1	LO12028010	Osc. Coil
L105	1	1	1	LI10158010	FM IFT
L106	1	1	1	LC17510010	Choke Coil, 0.75μH
L107	1	1	1	LC13320020	Choke Coil, 3.3μF
L108	1	1	1	LA10013080	AM RF Coil
L109	1	1	1	LO10013140	AM Osc. Coil
L110	1	1		LI10283010	AM IFT
L111	1	1	1	LI10013160	AM IFT
L112	1	1	1	LC13320020	Choke Coil, 3.3μF
L110			1	LI10283020	AM IFT
J101 ~ J104	4	4	4	YP10001130	Plug
J106 ~ J114	9	9	9	YP10001130	Plug
0424	1	1	1	2821109010	Shield
0425	1	1	1	2958109010	Shield
0508	1	1	1	2819159012	Drum
0510	1	1	1	71101689L0	Spring
0513	2	2	2	51064019A9	Set Screw
					P200 FM IF BOARD
P200	1	1	1	YD29151020	P.W. Board
	1	1	1	ZZ22221020	P.W. Board Assembly
P208	2	2	2	2933118020	Spacer
R201	1	1	1	RT05151140	Resistor, 150Ω ±5% ¼W
R202	1	1	1	RT05471140	Resistor, 470Ω ±5% ¼W

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
R203	1	1	1	RT05750140	Resistor, 75Ω ±5% ¼W
R204	1	1	1	RT05152140	Resistor, 1.5kΩ ±5% ¼W
R205	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R206	1	1	1	RT05821140	Resistor, 820Ω ±5% ¼W
R207	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R208	1	1	1	RT05152140	Resistor, 1.5kΩ ±5% ¼W
R210	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R211	1	1	1	RT05750140	Resistor, 75Ω ±5% ¼W
R212	1	1	1	RT05821140	Resistor, 820Ω ±5% ¼W
R213	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R214	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
R215	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
R216	1	1	1	RT05750140	Resistor, 75Ω ±5% ¼W
R217	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R218	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R219	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
R220	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
R221	1	1	1	RT05151140	Resistor, 150Ω ±5% ¼W
R223	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R224	1	1	1	RT05151140	Resistor, 150Ω ±5% ¼W
R226	1	1	1	RT05151140	Resistor, 150Ω ±5% ¼W
R227	1	1	1	RT05392140	Resistor, 3.9kΩ ±5% ¼W
R228	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
R229	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R230	1	1	1	RT05221140	Resistor, 220Ω ±5% ¼W
R231	1	1	1	RT05821140	Resistor, 820Ω ±5% ¼W
R232	1	1	1	RT05122140	Resistor, 1.2kΩ ±5% ¼W
R233	1	1	1	RT05682140	Resistor, 6.8kΩ ±5% ¼W
R234	1	1	1	RT05682140	Resistor, 6.8kΩ ±5% ¼W
R235	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R236	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R237	1	1	1	RT05303140	Resistor, 30kΩ ±5% ¼W
R238	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W
R239	1	1	1	RT05510140	Resistor, 51Ω ±5% ¼W
R240	1	1	1	RT05510140	Resistor, 51Ω ±5% ¼W
R241	1	1	1	RT05510140	Resistor, 51Ω ±5% ¼W
R242	1	1	1	RT05510140	Resistor, 51Ω ±5% ¼W
R243	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R244	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R245	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
R246	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
R247	1	1	1	RT05471140	Resistor, 470Ω ±5% ¼W
R248	1	1	1	RT05221140	Resistor, 220Ω ±5% ¼W
R249	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R250	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R251	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W
R252	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R253	1	1	1	RA01040180	Trimming Resistor, 100kΩ
R254	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W
R256	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R257	1	1	1	RT05473140	Resistor, 47kΩ ±5% ¼W
R258	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
R259	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R260	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R261	1	1	1	RT05473140	Resistor, 47kΩ ±5% ¼W
R262	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R263	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
R264	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R265	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
R266	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
R267	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R268	1	1	1	RC00000120	Resistor, 0Ω
R269	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
C201	1	1	1	DK18104020	Ceramic Cap., 0.1μF +100 −0%
C202	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C203	1	1	1	DK18403010	Ceramic Cap., 0.04μF +100 −0%
C204	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C205	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C206	1	1	1	DK18403010	Ceramic Cap., 0.04μF +100 −0%
C207	1	1	1	DD16201010	Ceramic Cap., 200pF ±10%
C208	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±10%
C209	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±10%
C210	1	1	1	DK18403010	Ceramic Cap., 0.04μF +100 −0%
C211	1	1	1	DD16101010	Ceramic Cap., 100pF ±10%
C212	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C213	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C214	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C215	1	1	1	DK18403010	Ceramic Cap., 0.04μF +100 −0%
C216	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C217	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C218	1	1	1	EA10601690	Electrolytic Cap., 10μF 16V
C219	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C220	1	1	1	DK18403010	Ceramic Cap., 0.04μF +100 −0%
C221	1	1	1	DD16201010	Ceramic Cap., 200pF ±10%
C222	1	1	1	DD16201010	Ceramic Cap., 200pF ±10%
C223	1	1	1	EA10601690	Electrolytic Cap., 10μF 16V
C224	1	1	1	EA10601690	Electrolytic Cap., 10μF 16V
C225	1	1	1	DD16201010	Ceramic Cap., 200pF ±10%
C226	1	1	1	EA10701090	Electrolytic Cap., 100μF 10V
C227	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C228	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C229	1	1	1	DD16201010	Ceramic Cap., 200pF ±10%
C230	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20%
C231	1	1	1	EA10505090	Electrolytic Cap., 1μF 50V
C232	1	1	1	EA33602590	Electrolytic Cap., 33μF 25V
C233	1	1	1	EA10601690	Electrolytic Cap., 10μF 16V
C234	1	1	1	DK18403010	Ceramic Cap., 0.04μF +100 −0%
C235	1	1	1	EA47601090	Electrolytic Cap., 47μF 10V
H201	1	1	1	HT308291C0	Transistor, 2SC829C
H202	1	1	1	HT308291C0	Transistor, 2SC829C
H203	1	1	1	HT308291C0	Transistor, 2SC829C
H204	1	1	1	HT308291C0	Transistor, 2SC829C
H205	1	1	1	HT310471C0	Transistor, 2SC1047C
H206	1	1	1	HT308291C0	Transistor, 2SC829C
H207	1	1	1	HT30372100	Transistor, 2SC372
H208	1	1	1	HT30372100	Transistor, 2SC372
H209	1	1	1	HT30373100	Transistor, 2SC373
H211	1	1	1	HD10001050	Diode, 1N60
H212	1	1	1	HD10001050	Diode, 1N60
H213	1	1	1	HD20011050	Diode, 1S1555
H214	1	1	1	HD20011050	Diode, 1S1555
H215	1	1	1	HD10003020	Diode, 20A90M
H216	1	1	1	HD10003020	Diode, 20A90M
H217	1	1	1	HD10001050	Diode, 1N60

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
H218	1	1	1	HD10001050	Diode, 1N60
F201	1	1	1	FF11070050	Ceramic Cap., SFE 10.7MHz
F202	1	1	1	FF11070050	Ceramic Cap., SFE 10.7MHz
L201	1	1	1	LI10188020	IFT, FM DET
L202	1	1	1	LI10156020	IFT, FM
J201 ~ J212	12	12	12	YP10001130	Plug
1031	1	1	1	62030039W0	Lug
1032	1	1	1	62030039W0	Lug
J213	1	1	1	YP10001130	Plug
J214	1	1	1	YP10001130	Plug
					P300 FM MPX. BOARD
P300	1	1	1	YD29151030	P.W. Board
	1	1		ZZ22221030	P.W. Board Assembly
			1	ZZ22228030	P.W. Board Assembly
P308	4	4	4	2933118020	Spacer
R301	1	1	1	RT05221140	Resistor, 220Ω ±5% ¼W
R302	1	1	1	RT05563140	Resistor, 56kΩ ±5% ¼W
R303	1	1	1	RA01030250	Trimming Resistor, 10kΩ
R304	1	1	1	RA04720050	Trimming Resistor, 4.7kΩ
R305	1	1	1	RT05163140	Resistor, 16kΩ ±5% ¼W
R306	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R307	1	1	1	RT05224140	Resistor, 220kΩ ±5% ¼W
R308	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R309	1	1	1	RT05392140	Resistor, 3.9kΩ ±5% ¼W
R310	1	1	1	RT05392140	Resistor, 3.9kΩ ±5% ¼W
R311	1	1	1	RT05100140	Resistor, 10Ω ±5% ¼W
R312	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R313	1	1	1	RT05224140	Resistor, 220kΩ ±5% ¼W
R314	1	1	1	RT05303140	Resistor, 30kΩ ±5% ¼W
R315	1	1	1	RT05303140	Resistor, 30kΩ ±5% ¼W
R316	1	1	1	RT05155140	Resistor, 1.5MΩ ±5% ¼W
R317	1	1	1	RT05155140	Resistor, 1.5MΩ ±5% ¼W
R318	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
R319	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
R320	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R321	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R322	1	1	1	RT05681140	Resistor, 680Ω ±5% ¼W
R323	1	1	1	RT05681140	Resistor, 680Ω ±5% ¼W
R324	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R325	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
R326	1	1	1	RT05822140	Resistor, 8.2kΩ ±5% ¼W
R327	1	1	1	RT05822140	Resistor, 8.2kΩ ±5% ¼W
R328	1	1	1	RT05561140	Resistor, 560Ω ±5% ¼W
R329	1	1	1	RT05561140	Resistor, 560Ω ±5% ¼W
R330	1	1	1	RT05224140	Resistor, 220kΩ ±5% ¼W
R331	1	1	1	RT05224140	Resistor, 220kΩ ±5% ¼W
R332	1	1	1	RT05152140	Resistor, 1.5kΩ ±5% ¼W
R333	1	1	1	RT05224140	Resistor, 220kΩ ±5% ¼W
R334	1	1	1	RT05224140	Resistor, 220kΩ ±5% ¼W
R335	1	1	1	RT05272140	Resistor, 2.7kΩ ±5% ¼W
R336	1	1	1	RC00000120	Resistor, 0Ω ½W
C319	1	1		DF15102050	Film Cap., 1000pF ±5%
C320	1	1		DF15102050	Film Cap., 1000pF ±5%

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
C301	1	1	1	EA10601690	Electrolytic Cap., 10μF 16V
C302	1	1	1	DF17473010	Film Cap., 0.047μF ±20%
C303	1	1	1	DF55471010	Film Cap., 470pF
C304	1	1	1	DF16222050	Film Cap., 2200pF ±10%
C305	1	1	1	EQ47405010	Electrolytic Cap., 0.47μF±20% 35V
C306	1	1	1	EQ22405010	Electrolytic Cap., 0.22μF±20% 35V
C307	1	1	1	EQ22405010	Electrolytic Cap., 0.22μF±20% 35V
C308	1	1	1	EA22701690	Electrolytic Cap., 220μF 16V
C309	1	1	1	DF16152050	Film Cap., 1500pF ±10%
C310	1	1	1	DF16152050	Film Cap., 1500pF ±10%
C311	1	1	1	DD15361010	Ceramic Cap., 360pF ±5%
C312	1	1	1	DD15361010	Ceramic Cap., 360pF ±5%
C313	1	1	1	DF16332050	Film Cap., 3300pF ±10%
C314	1	1	1	DF16332050	Film Cap., 3300pF ±10%
C315	1	1	1	DF15152050	Film Cap., 1500pF ±5%
C316	1	1	1	DF15152050	Film Cap., 1500pF ±5%
C317	1	1	1	DF16222050	Film Cap., 2200pF ±10%
C318	1	1	1	DF16222050	Film Cap., 2200pF ±10%
C319			1	DF15222050	Film Cap., 2200pF ±5%
C320			1	DF15222050	Film Cap., 2200pF ±5%
C321	1	1	1	EV22403510	Electrolytic Cap., 0.22μF±20% 35V
C322	1	1	1	EV22403510	Electrolytic Cap., 0.22μF±20% 35V
C323	1	1	1	EV10503520	Electrolytic Cap., 1μF ±20% 35V
C324	1	1	1	EV10503520	Electrolytic Cap., 1μF ±20% 35V
C325	1	1	1	EA22703590	Electrolytic Cap, 220μF 35V
H301	1	1	1	HC10004010	IC, HA1156
H302	1	1	1	HT30372100	Transistor, 2SC372
H303	1	1	1	HT30372100	Transistor, 2SC372
H304	1	1	1	HT313272A0	Transistor, 2SC1327 S or T
H305	1	1	1	HT313272A0	Transistor, 2SC1327 S or T
H306	1	1	1	HT108422A0	Transistor, 2SA842 GR or BL
H307	1	1	1	HT108422A0	Transistor, 2SA842 GR or BL
L301	1	1	1	LS10013040	MPX Coil, 56mH
L302	1	1	1	LS10013040	MPX Coil, 56mH
L303	1	1	1	LS10013050	MPX Coil, 43mH
L304	1	1	1	LS10013050	MPX Coil, 43mH
J301 ≀ J314	14	14	14	YP10001130	Plug
					P400 EQL. AMP. BOARD
P400	1	1	1	YD29151040	P.W. Board
	1	1	1	ZZ29153040	P.W. Board Assembly
P408	2	2	2	2933118020	Spacer
R401	1	1	1	RT05823140	Resistor, 82kΩ ±5% ¼W
R402	1	1	1	RT05823140	Resistor, 82kΩ ±5% ¼W
R403	1	1	1	RT05471140	Resistor, 470Ω ±5% ¼W
R404	1	1	1	RT05471140	Resistor, 470Ω ±5% ¼W
R405	1	1	1	RN05394140	Resistor, 390kΩ ±5% ¼W
R406	1	1	1	RN05394140	Resistor, 390kΩ ±5% ¼W
R407	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R408	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R409	1	1	1	RT05821140	Resistor, 820Ω ±5% ¼W
R410	1	1	1	RT05821140	Resistor, 820Ω ±5% ¼W
R411	1	1	1	RN05104140	Resistor, 100kΩ ±5% ¼W
R412	1	1	1	RN05104140	Resistor, 100kΩ ±5% ¼W
R413	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
R414	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W
R415	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
R416	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
R417	1	1	1	RT05182140	Resistor, 1.8kΩ ±5% ¼W
R418	1	1	1	RT05182140	Resistor, 1.8kΩ ±5% ¼W
R419	1	1	1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
R420	1	1	1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
R421	1	1	1	RT05224140	Resistor, 220kΩ ±5% ¼W
R422	1	1	1	RT05224140	Resistor, 220kΩ ±5% ¼W
R423	1	1	1	RT05563140	Resistor, 56kΩ ±5% ¼W
R424	1	1	1	RT05563140	Resistor, 56kΩ ±5% ¼W
R425	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R426	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R427	1	1	1	RN05824140	Resistor, 820kΩ ±5% ¼W
R428	1	1	1	RN05824140	Resistor, 820kΩ ±5% ¼W
R429	1	1	1	RT05101140	Resistor, 100Ω ±5% ¼W
C401	1	1	1	EV22502560	Electrolytic Cap., 2.2μF ±20% 25V
C402	1	1	1	EV22502560	Electrolytic Cap., 2.2μF ±20% 25V
C403	1	1	1	DD15201010	Ceramic Cap., 200pF ±10% 50V
C404	1	1	1	DD15201010	Ceramic Cap., 200pF ±10% 50V
C405	1	1	1	DD16101010	Ceramic Cap., 100pF ±10% 50V
C406	1	1	1	DD16101010	Ceramic Cap., 100pF ±10% 50V
C407	1	1	1	EE22602510	Electrolytic Cap., 22μF ±20% 25V
C408	1	1	1	EE22602510	Electrolytic Cap., 22μF ±20% 25V
C409	1	1	1	DD16300010	Ceramic Cap., 30pF ±10% 50V
C410	1	1	1	DD16300010	Ceramic Cap., 30pF ±10% 50V
C411	1	1	1	EA47601690	Electrolytic Cap., 47μF $^{+100}_{-10}$% 16V
C412	1	1	1	EA47601690	Electrolytic Cap., 47μF $^{+100}_{-10}$% 16V
C413	1	1	1	DD16101010	Ceramic Cap., 100pF ±10% 50V
C414	1	1	1	DD16101010	Ceramic Cap., 100pF ±10% 50V
C415	1	1	1	DF17474010	Film Cap., 0.47μF ±20% 50V
C416	1	1	1	DF17474010	Film Cap., 0.47μF ±20% 50V
C417	1	1	1	DF54122010	Film Cap., 1200pF ±2% 50V
C418	1	1	1	DF54122010	Film Cap., 1200pF ±2% 50V
C419	1	1	1	DF55472010	Film Cap., 4700pF ±5% 50V
C420	1	1	1	DF55472010	Film Cap., 4700pF ±5% 50V
C421	1	1	1	EA10705090	Electrolytic Cap., 100μF $^{+100}_{-10}$% 50V
C423	1	1	1	DD16500010	Ceramic Cap., 50pF ±10% 50V
C424	1	1	1	DD16500010	Ceramic Cap., 50pF ±10% 50V
H401	1	1	1	HT313281T0	Transistor, 2SC1328 T
H402	1	1	1	HT313281T0	Transistor, 2SC1328 T
H403	1	1	1	HT313282A0	Transistor, 2SC1328 S, T
H404	1	1	1	HT313282A0	Transistor, 2SC1328 S, T
H405	1	1	1	HT313281T0	Transistor, 2SC1328 T
H406	1	1	1	HT313281T0	Transistor, 2SC1328 T
J401 ≀ J407	7	7	7	YP10001130	Plug
1702	2	2	2	51440314A9	P.H.M. Screw S, P3 x 14
1703	2	2	2	54020301A0	Flat Washer
1704	2	2	2	53110303A9	Hexagon Nut
1708	4	4	4	51100306S9	B.H.M. Screw, B3 x 6
1713	2	2	2	51100306S9	B.H.M. Screw, B3 x 6
H733	1	1	1	HD20005010	Diode, W06B
H734	1	1	1	HD20005010	Diode, W06B
H735	1	1	1	HD20005010	Diode, W06B
H736	1	1	1	HD20005010	Diode, W06B

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
					P700 MAIN AMP. BOARD
P700	1	1	1	YD29581012	P.W. Board
	1	1	1	ZZ29583012	P.W. Board Assembly
P708	40	40	40	2933118020	Spacer
R701	1	1	1	RT05202140	Resistor, 2.0kΩ ±5% ¼W
R702	1	1	1	RT05202140	Resistor, 2.0kΩ ±5% ¼W
R703	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W
R704	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W
R705	1	1	1	RT05682140	Resistor, 6.8kΩ ±5% ¼W
R706	1	1	1	RT05682140	Resistor, 6.8kΩ ±5% ¼W
R707	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R708	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R709	1	1	1	RT05103140	Resistor, 10kΩ ±5% ¼W
R710	1	1	1	RT05103140	Resistor, 10kΩ ±5% ¼W
R711	1	1	1	RA05020170	Trimming Resistor, 5kΩ (B)
R712	1	1	1	RA05020170	Trimming Resistor, 5kΩ (B)
R713	1	1	1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
R714	1	1	1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
R715	1	1	1	RT05184140	Resistor, 180kΩ ±5% ¼W
R716	1	1	1	RT05184140	Resistor, 180kΩ ±5% ¼W
R717	1	1	1	RT05362140	Resistor, 3.6kΩ ±5% ¼W
R718	1	1	1	RT05362140	Resistor, 3.6kΩ ±5% ¼W
R719	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W
R720	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W
R721	1	1	1	GF05330140	Resistor, 33Ω ±5% ¼W
R722	1	1	1	GF05330140	Resistor, 33Ω ±5% ¼W
R723	1	1	1	GF05221140	Resistor, 220Ω ±5% ¼W
R724	1	1	1	GF05221140	Resistor, 220Ω ±5% ¼W
R725	1	1	1	RT05242140	Resistor, 2.4kΩ ±5% ¼W
R726	1	1	1	RT05242140	Resistor, 2.4kΩ ±5% ¼W
R727	1	1	1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
R728	1	1	1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
R729	1	1	1	RT05820140	Resistor, 82Ω ±5% ¼W
R730	1	1	1	RT05820140	Resistor, 82Ω ±5% ¼W
R731	1	1	1	HH00003030	Thermister, S-DT-04
R732	1	1	1	HH00003030	Thermister, S-DT-04
R733	1	1	1	RA03010020	Trimming Resistor, 300Ω (B)
R734	1	1	1	RA03010020	Trimming Resistor, 300Ω (B)
R735	1	1	1	RT05681140	Resistor, 680Ω ±5% ¼W
R736	1	1	1	RT05681140	Resistor, 680Ω ±5% ¼W
R737	1	1	1	GF05910140	Resistor, 91Ω ±5% ¼W
R738	1	1	1	GF05910140	Resistor, 91Ω ±5% ¼W
R739	1	1	1	GF05101140	Resistor, 100Ω ±5% ¼W
R740	1	1	1	GF05101140	Resistor, 100Ω ±5% ¼W
R741	1	1	1	GF05182140	Resistor, 1.8kΩ ±5% ¼W
R742	1	1	1	GF05182140	Resistor, 1.8kΩ ±5% ¼W
R743	1	1	1	GF05911140	Resistor, 910Ω ±5% ¼W
R744	1	1	1	GF05911140	Resistor, 910Ω ±5% ¼W
R745	1	1	1	GF05182140	Resistor, 1.8kΩ ±5% ¼W
R746	1	1	1	GF05182140	Resistor, 1.8kΩ ±5% ¼W
R747	1	1	1	GF05101140	Resistor, 100Ω ±5% ¼W
R748	1	1	1	GF05101140	Resistor, 100Ω ±5% ¼W
R749	1	1	1	GF05101140	Resistor, 100Ω ±5% ¼W
R750	1	1	1	GF05101140	Resistor, 100Ω ±5% ¼W
R751	1	1	1	GF05100140	Resistor, 10Ω ±5% ¼W
R752	1	1	1	GF05100140	Resistor, 10Ω ±5% ¼W

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
R753	1	1	1	GF05221120	Resistor, 220Ω ±5% ½W
R754	1	1	1	GF05221120	Resistor, 220Ω ±5% ½W
R755	1	1	1	GF05221120	Resistor, 220Ω ±5% ½W
R756	1	1	1	GF05221120	Resistor, 220Ω ±5% ½W
R757	1	1	1	GF05100140	Resistor, 10Ω ±5% ¼W
R758	1	1	1	GF05100140	Resistor, 10Ω ±5% ¼W
R759	1	1	1	GW10472020	Resistor, 0.47Ω ±10% 2W
R760	1	1	1	GW10472020	Resistor, 0.47Ω ±10% 2W
R761	1	1	1	GW10472020	Resistor, 0.47Ω ±10% 2W
R762	1	1	1	GW10472020	Resistor, 0.47Ω ±10% 2W
R763	1	1	1	GJ05100020	Resistor, 10Ω ±5% 2W
R764	1	1	1	GJ05100020	Resistor, 10Ω ±5% 2W
R765	1	1	1	GF05220140	Resistor, 22Ω ±5% ¼W
R766	1	1	1	GF05102120	Resistor, 1kΩ ±5% ½W
R767	1	1	1	RC10562120	Resistor, 5.6kΩ ±10% ½W
R768	1	1	1	RC10562120	Resistor, 5.6kΩ ±10% ½W
R769	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W
R770	1	1	1	RT05123140	Resistor, 12kΩ ±5% ¼W
R771	1	1	1	RT05682140	Resistor, 6.8kΩ ±5% ¼W
R772	1	1	1	GF05151120	Resistor, 150Ω ±5% ½W
R773	1	1	1	RT05184140	Resistor, 180kΩ ±5% ¼W
R774	1	1	1	RT05393140	Resistor, 39kΩ ±5% ¼W
R775	1	1	1	RC10022120	Resistor, 2.2Ω ±10% ½W
R776	1	1	1	RC10022120	Resistor, 2.2Ω ±10% ½W
R777	1	1	1	RC00000120	Resistor, 0Ω
R778	1	1	1	RC00000120	Resistor, 0Ω
R779	1	1	1	RC00000120	Resistor, 0Ω
C701	1	1	1	EE33502510	Electrolytic Cap., 3.3μF ±20% 25V
C702	1	1	1	EE33502510	Electrolytic Cap., 3.3μF ±20% 25V
C703	1	1	1	DD16201010	Ceramic Cap., 200pF 50V
C704	1	1	1	DD16201010	Ceramic Cap., 200pF 50V
C705	1	1	1	EE47601620	Electrolytic Cap., 47μF ±20% 16V
C706	1	1	1	EE47601620	Electrolytic Cap., 47μF ±20% 16V
C707	1	1	1	DD10030500	Ceramic Cap., 3pF 500V
C708	1	1	1	DD10030500	Ceramic Cap., 3pF 500V
C709	1	1	1	EA47605090	Electrolytic Cap., 47μF $^{+100}_{-10}$% 50V
C710	1	1	1	EA47605090	Electrolytic Cap., 47μF $^{+100}_{-10}$% 50V
C715	1	1	1	DK16101500	Ceramic Cap., 100pF
C716	1	1	1	DK16101500	Ceramic Cap., 100pF
C717	1	1	1	DF17104520	Film Cap., 0.1μF 200V
C718	1	1	1	DF17104520	Film Cap., 0.1μF 200V
C719	1	1	1	EA22705090	Electrolytic Cap., 220μF $^{+100}_{-10}$% 50V
C720	1	1	1	EA10603590	Electrolytic Cap., 10μF $^{+100}_{-10}$% 35V
C721	1	1	1	EA47601690	Electrolytic Cap., 47μF $^{+100}_{-10}$% 16V
C722	1	1	1	EA33701090	Electrolytic Cap., 330μF $^{+100}_{-10}$% 10V
J701					
≀	4	4	4	YP10001130	Plug
J704					
J705					
≀	4	4	4	YP10001200	Plug
J708					
J709					
≀	19	19	19	YP10001130	Plug
J727					
H701	1	1	1	HT107221T0	Transistor, 2SA722 T, U
H702	1	1	1	HT107221T0	Transistor, 2SA722 T, U
H703	1	1	1	HT107221T0	Transistor, 2SA722 T, U

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
H704	1	1	1	HT107221T0	Transistor, 2SA722 T, U
H705	1	1	1	HV00003120	Diode, MV-13
H706	1	1	1	HV00003120	Diode, MV-13
H707	1	1	1	HT315092B0	Transistor, 2SC1509 Q, R
H708	1	1	1	HT315092B0	Transistor, 2SC1509 Q, R
H709	1	1	1	HT309451Q0	Transistor, 2SC 945 Q
H710	1	1	1	HT309451Q0	Transistor, 2SC 945 Q
H711	1	1	1	HT107331Q0	Transistor, 2SA 733 Q
H712	1	1	1	HT107331Q0	Transistor, 2SA 733 Q
H713	1	1	1	HD20002210	Diode, 1S2472 (Gr)
H714	1	1	1	HD20002210	Diode, 1S2472 (Gr)
H715	1	1	1	HD20002210	Diode, 1S2472 (Gr)
H716	1	1	1	HD20002210	Diode, 1S2472 (Gr)
H717	1	1	1	HD20002210	Diode, 1S2472 (Gr)
H718	1	1	1	HD20002210	Diode, 1S2472 (Gr)
H719	1	1	1	HD20002210	Diode, 1S2472 (Gr)
H720	1	1	1	HD20002210	Diode, 1S2472 (Gr)
H721	1	1	1	HT315671Q0	Transistor, 2SC1567 Q, R
H722	1	1	1	HT315671Q0	Transistor, 2SC1567 Q, R
H723	1	1	1	HT107941Q0	Transistor, 2SA 794 Q, R
H724	1	1	1	HT107941Q0	Transistor, 2SA 794 Q, R
H725	1	1	1	HD30030090	Diode, WZ-177
H726	1	1	1	HT309452A0	Transistor, 2SC 945 Q, R
H727	1	1	1	HT309452A0	Transistor, 2SC 945 Q, R
H728	1	1	1	HT313182C0	Transistor, 2SC1318 R, S
H729	1	1	1	HD20003210	Diode, 1S2471
H730	1	1	1	HV00003120	Diode, MV-13
H731	1	1	1	HV00003120	Diode, MV-13
L701	1	1	1	LC22720010	Coil, 2.7μF
L702	1	1	1	LC22720010	Coil, 2.7μF
L703	1	1	1	LY20240090	Relay, MY-2Z-02 24V
H005	1	1	1	HV00005080	Diode, STU-3H (CY)
H006	1	1	1	HV00005080	Diode, STU-3H (CY)
2411	2	2	2	1169005020	Clamper
2412	2	2	2	51102606B0	B.H.M. Screw, B2.6 x 6
2413	2	2	2	53112603E0	Hexagon Nut
2506	1	1	1	2915267012	Heatsink
2507	2	2	2	2915160070	Bracket
2508	4	4	4	51380305P0	R.H. Tapped Screw, R3 x 5
2511	8	8	8	51100314E9	B.H.M. Screw, B3 x 14
2513	8	8	8	54040302N0	Spring Washer
2516	2	2	2	2820160070	Bracket
2517	8	8	8	51380306P0	R.H. Tapped Screw, R3 x 6
2520	2	2	2	2818101040	Support
H001	1	1	1	HT401881M0	Transistor, 2SD188 ML
H002	1	1	1	HT106271M0	Transistor, 2SA627 ML
H003	1	1	1	HT106271M0	Transistor, 2SA627 ML
H004	1	1	1	HT401881M0	Transistor, 2SD188 ML
J009	1	1	1	YJ05000192	Socket
J010	1	1	1	YJ05000192	Socket
J011	1	1	1	YJ05000192	Socket
J012	1	1	1	YJ05000192	Socket
2706	1	1	1	1210005010	Clamper

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
					P800 POWER SUPPLY BOARD
P800	1	1	1	YD29151060	P.W. Board
	1	1	1	ZZ29153060	P.W. Board Assembly
P808	8	8	8	2933118020	Spacer
R801	1	1	1	GJ05220020	Resistor, 22Ω ±5% 2W
R802	1	1	1	GF05100140	Resistor, 10Ω ±5% ¼W
R803	1	1	1	RT05152140	Resistor, 1.5kΩ ±5% ¼W
R804	1	1	1	RT05152140	Resistor, 1.5kΩ ±5% ¼W
R805	1	1	1	GJ05331020	Resistor, 330Ω ±5% 2W
R806	1	1	1	RT05363140	Resistor, 36kΩ ±5% ¼W
R807	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
R808	1	1	1	RA05020130	Trimming Resistor, 5kΩ (B)
C801	1	1	1	DK18103510	Ceramic Cap., 0.01μF +100 −0% 500V
C802	1	1	1	DK18103510	Ceramic Cap., 0.01μF +100 −0% 500V
C803	1	1	1	EA47706310	Electrolytic Cap., 470μF 63V
C804	1	1	1	EA47705090	Electrolytic Cap., 470μF 50V
C805	1	1	1	EA10705090	Electrolytic Cap., 100μF 50V
C806	1	1	1	DF17473050	Film Cap., 0.047μF ±20% 50V
C807	1	1	1	DK18403020	Ceramic Cap., 0.04μF +100 −0% 50V
C808	1	1	1	EA33505090	Electrolytic Cap., 3.3μF 50V
C809	1	1	1	EA47701690	Electrolytic Cap., 470μF 16V
C810	1	1	1	EA10801090	Electrolytic Cap., 1000μF 10V
H801	1	1	1	HD20015080	Diode, SS-3R
H802	1	1	1	HD20014080	Diode, SS-3
H803	1	1	1	HD20012030	Diode, DS132B
H804	1	1	1	HD20011030	Diode, DS131B
H805	1	1	1	HT403302A0	Transistor, 2SD330 D or E
H806	1	1	1	HT309452A0	Transistor, 2SC945 Q or R
H807	1	1	1	HD30021090	Diode, BZ-140 14V
H808	1	1	1	HD20004130	Diode, S1B01-02
J801 ~ J815	15	15	15	YP10001130	Plug
J816 ~ J819	4	4	4	YJ08000210	Socket
2924	1	1	1	2915267020	Heatsink
2925	1	1	1	51100304E9	B.H.M. Screw, B3 x 4
					PC01 DOLBY BOARD
PC01	1	1		YD29151070	P.W. Board
	1	1		ZZ29153070	P.W. Board Assembly
RC01	1	1		RA01040150	Trimming Resistor, 100kΩ (B)
RC02	1	1		RA01040150	Trimming Resistor, 100kΩ (B)
RC03	1	1		RT05224140	Resistor, 220kΩ ±5% ¼W
RC04	1	1		RT05224140	Resistor, 220kΩ ±5% ¼W
RC05	1	1		RT05104140	Resistor, 100kΩ ±5% ¼W
RC06	1	1		RT05104140	Resistor, 100kΩ ±5% ¼W
RC07	1	1		RT05103140	Resistor, 10kΩ ±5% ¼W
RC08	1	1		RT05103140	Resistor, 10kΩ ±5% ¼W
RC09	1	1		RT05104140	Resistor, 100kΩ ±5% ¼W
RC10	1	1		RT05104140	Resistor, 100kΩ ±5% ¼W
CC01	1	1		EV10502560	Electrolytic Cap., 1μF 25V
CC02	1	1		EV10502560	Electrolytic Cap., 1μF 25V
CC03	1	1		EV10502560	Electrolytic Cap., 1μF 25V

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
CC04	1	1		EV10502560	Electrolytic Cap., 1μF 25V
JC01	8	8		YP10001130	Plug
JC08					
HC01	1	1		HT313272A0	Transistor, 2SC1327 S, T
HC02	1	1		HT313272A0	Transistor, 2SC1327 S, T
3303	1	1		2222160210	Bracket
3309	2	2	1	1455259030	Bushing
3311	4	4	4	51100308S9	B.H.M. Screw, B3 x 8
3312	4	4	4	53110303E9	Hexagon Nut
3314	2	2	2	51100308S9	B.H.M. Screw, B3 x 8
3315	2	2	2	53110303E9	Hexagon Nut
3316	6	6	6	51100308S9	B.H.M. Screw, B3 x 8
3317	6	6	6	53110303E9	Hexagon Nut
3332	3	3	3	51100306S9	B.H.M. Screw, B3 x 6
3403			2	53110303A9	Hexagon Nut
3405			2	51060316A9	P.H.M. Screw, P3 x 16
J001	1	1	1	YT03040090	Terminal, Ant.
J004	1	1	1	YT01010050	Terminal, Ground
J013	1	1	1	YT03040060	Terminal, Spk (Main)
J014	1	1	1	YT03040060	Terminal, Spk (Remote)
J015	1	1		YJ08000120	Socket, Fuse Holder
J016			1	YJ08000220	Socket, Fuse Holder
J017	1	1	1	YJ04000570	Jack, AC Outlet
J018	1	1	1	YJ04000570	Jack, AC Outlet
J019	1	1	1	YT02010090	Terminal, Quad. Out
F001	1	1		FS10300060	Fuse, 3A MGC
F002		1		FS20350910	Fuse, 3.5A (MGP)
F001			1	FS10160800	Fuse, 1.6A
W001	1	1		YC02400220	AC Cord,
3805	1	1	1	2819271130	Holder
3806	1	1	1	2578160522	Bracket
3811	2	2	2	51280312U0	B.H. Tapped Screw, B3 x 12
3816	2	2	2	51280312U0	B.H. Tapped Screw, B3 x 12
L001	1	1	1	LF11200460	Ant. Coil, AM
L002	1	1	1	LC13320020	Choke Coil, AM
C001	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20% 50V
C006	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20% 50V
J005	1	1	1	YT02040080	Terminal, 4P Pin-Jack
3910	1	1	1	62040029W0	Lug
C002	1	1	1	DK17103010	Ceramic Cap., 0.01μF ±20% 50V
J006	1	1	1	YT02080060	Terminal, 8P Pin-Jack
3925	1	1	1	62030049W0	Lug
4004	1	1	1	1382005030	Clamper AC Cord
4022	1	1	1	62030039W0	Lug
R003	1	1		RC10225120	Resistor, 2.2MΩ ±10% ½W
4103	1	1	1	2915160505	Bracket, K
4110	2	2	2	51100306A9	B.H.M. Screw, B3 x 6
4113	2	2	2	51100306A9	P.H.M. Screw, P3 x 6
4116	1	1	1	2818160032	Bracket
4117	1	1	1	2818160042	Bracket

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
4118	4	4	4	51100405A9	B.H.M. Screw, B4 x 5
4121	4	4	4	51100306A9	B.H.M. Screw, B3 x 6
4122	2	2	2	51100306A9	B.H.M. Screw, B3 x 6
4123	2	2	2	51100305A9	B.H.M. Screw, B3 x 5
4124	1	1	1	2577106020	Bearing
4125	1	1	1	1415118010	Spacer
4126	2	2	2	51040306A9	F.H.M. Screw, F3 x 6
4127	2	2	2	51490306A9	B.H.M. Screw, B3 x 6
4128	2	2	2	2871053020	Cover
4129	1	1	1	2915120040	Insulator
4131	1	1	1	2819120050	Insulator
4132	1	1	1	2853269010	Protector
4133	2	2	2	51570305B0	P.H. Tapped Screw, P3 x 5
4202	2	2	2	51570306B0	P.H. Tapped Screw, P3 x 6
4203	2	2	2	54050300R0	T.L. Washer, OR
4206	2	2	2	51042608A0	F.H.M. Screw, F2.6 x 8
4229	1	1	1	2871051020	Guide
4233	4	4	4	2886120020	Insulator
4622	1	1	1	2915160060	Bracket
J015	1	1	1	YJ01000980	Jack, Headphone
4711	1	1	1	2915160050	Bracket
4712	2	2	2	51060306A9	P.H.M. Screw, P3 x 6
G001	1			BF10400040	Printed Comp.
C007		1		DF17473590	Film Cap., 0.047μF 125V
C007			1	DF17473580	Film Cap., 0.047μF 250V AC
P001			2	2933118020	Spacer
S002	1	1		SP02010150	Power Switch
S002			1	SP04010150	Power Switch
4808	2	2	2	2886107010	Sheet
M001	1	1	1	IM11042160	Meter, AM/FM Strength
M005	1	1	1	IM11042150	Meter, Center
4903	1	1	1	2874259010	Bushing
M003	1	1	1	IN10080340	Lamp, Stereo Ind.
5002	1	1	1	2886274012	Reflector
5003	1	1	1	2886271020	Holder
5005	2	2	2	51480306A9	B.H.M. Screw F, B3 x 6
5006	2	2	2	5157030580	P.H. Tapped Screw, P3 x 5
M004	1	1	1	IN10080070	Lamp, Meter
M006	1	1	1	IN10080070	Lamp, Meter
J002	1	1	1	YJ08000190	Socket
J008	1	1	1	YJ08000190	Socket
5103	1	1	1	1382005030	Clamper
5202	1	1	1	2915109030	Shield
5203	1	1	1	2915120030	Insulator
5302	1	1	1	2871271110	Holder
5303	2	2	2	5157030580	P.H. Tapped Screw, P3 x 5
5307	2	2	2	51100306A9	B.H.M. Screw, B3 x 6
5312	1	1	1	2871274013	Reflector
5313	2	2	2	51480306A9	B.H.M. Screw F, B3 x 6

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
					PZ01 DIAL LAMP BOARD
PZ01	1	1	1	YD28860160	P.W. Board
	1	1	1	ZZ28891160	P.W. Board Assembly
MZ01	1	1	1	IN10080070	Lamp
MZ02	1	1	1	IN10080070	Lamp
MZ03	1	1	1	IN10080070	Lamp
MZ04	1	1	1	IN10080070	Lamp
MZ05	1	1	1	IN10080070	Lamp
JZ01 ~ JZ10	10	10	10	YJ08000170	Socket
JZ11 ~ JZ14	4	4	4	YP10001200	Plug
5503	2	2	2	2871005010	Clamper
5603	1	1	1	2853106500	Bearing, K
5608	1	1	1	51640410D9	Set Screw C.P.
5609	1	1	1	54040402N0	Spring Washer
5610	1	1	1	53110403E9	Hexagon Nut
					PE01 PRE-TONE AMP. BOARD
PE01	1	1	1	YD29151082	P.W. Board
	1	1	1	ZZ29583080	P.W. Board Assembly
PE08	2	2	2	2933118020	Spacer
RE01	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
RE02	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
RE03	1	1	1	RT05391140	Resistor, 390Ω ±5% ¼W
RE04	1	1	1	RT05391140	Resistor, 390Ω ±5% ¼W
RE05	1	1	1	RN05105140	Resistor, 1MΩ ±5% ¼W
RE06	1	1	1	RN05105140	Resistor, 1MΩ ±5% ¼W
RE07	1	1	1	RN05104140	Resistor, 100kΩ ±5% ¼W
RE08	1	1	1	RT05103140	Resistor, 10kΩ ±5% ¼W
RE09	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RE10	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RE11	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
RE12	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
RE13	1	1	1	RT05752140	Resistor, 7.5kΩ ±5% ¼W
RE14	1	1	1	RT05752140	Resistor, 7.5kΩ ±5% ¼W
RE15	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
RE16	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
RE17	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
RE18	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
RE19	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RE20	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RE21	1	1	1	RT05123140	Resistor, 12kΩ ±5% ¼W
RE22	1	1	1	RT05123140	Resistor, 12kΩ ±5% ¼W
RE23	1	1	1	RT05154140	Resistor, 150kΩ ±5% ¼W
RE24	1	1	1	RT05154140	Resistor, 150kΩ ±5% ¼W
RE25	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RE26	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RE27	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RE28	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RE29	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RE30	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RE31	1	1	1	RT05123140	Resistor, 12kΩ ±5% ¼W
RE32	1	1	1	RT05123140	Resistor, 12kΩ ±5% ¼W
RE33	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
RE34	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
RE35	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
RE36	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
RE37	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RE38	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RE39	1	1	1	RT05225140	Resistor, 2.2MΩ ±5% ¼W
RE40	1	1	1	RT05225140	Resistor, 2.2MΩ ±5% ¼W
RE41	1	1	1	RT05683140	Resistor, 68kΩ ±5% ¼W
RE42	1	1	1	RT05683140	Resistor, 68kΩ ±5% ¼W
RE43	1	1	1	RT05473140	Resistor, 47kΩ ±5% ¼W
RE44	1	1	1	RT05473140	Resistor, 47kΩ ±5% ¼W
RE45	1	1	1	RT05103140	Resistor, 10kΩ ±5% ¼W
RE46	1	1	1	RT05103140	Resistor, 10kΩ ±5% ¼W
RE47	1	1	1	RT05221140	Resistor, 220Ω ±5% ¼W
RE48	1	1	1	RT05221140	Resistor, 220Ω ±5% ¼W
RE49	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
RE50	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
RE51	1	1	1	RM01040140	Variable Resistor, 100kΩ (B)High
RE52	1	1	1	RM01040140	Variable Resistor, 100kΩ (B)Mid
RE53	1	1	1	RM01040140	Variable Resistor, 100kΩ (B)Low
RE54	1	1	1	RT05821140	Resistor, 820Ω ±5% ¼W
RE55	1	1	1	RC00000120	Resistor, 0Ω
RE56	1	1	1	RC00000120	Resistor, 0Ω
CE01	1	1	1	DF17224050	Film Cap., 0.22μF ±20% 50V
CE02	1	1	1	DF17224050	Film Cap., 0.22μF ±20% 50V
CE03	1	1	1	EA10603590	Electrolytic Cap., 10μF +100 −10 % 35V
CE04	1	1	1	EA10603590	Electrolytic Cap., 10μF +100 −10 % 35V
CE05	1	1	1	EE47502510	Electrolytic Cap., 4.7μF ±20% 25V
CE06	1	1	1	EE47502510	Electrolytic Cap., 4.7μF ±20% 25V
CE07	1	1	1	DD16101010	Ceramic Cap., 100pF ±10% 50V
CE08	1	1	1	DD16101010	Ceramic Cap., 100pF ±10% 50V
CE09	1	1	1	DF16222050	Film Cap., 2200pF ±10% 50V
CE10	1	1	1	DF16222050	Film Cap., 2200pF ±10% 50V
CE11	1	1	1	DF16682050	Film Cap., 6800pF ±10% 50V
CE12	1	1	1	DF16682050	Film Cap., 6800pF ±10% 50V
CE13	1	1	1	DF16223050	Film Cap., 0.022μF ±10% 50V
CE14	1	1	1	DF16223050	Film Cap., 0.022μF ±10% 50V
CE15	1	1	1	DF16223050	Film Cap., 0.022μF ±10% 50V
CE16	1	1	1	DF16223050	Film Cap., 0.022μF ±10% 50V
CE17	1	1	1	DF16103050	Film Cap., 0.01μF ±10% 50V
CE18	1	1	1	DF16103050	Film Cap., 0.01μF ±10% 50V
CE19	1	1	1	EE10505010	Electrolytic Cap., 1μF ±20% 50V
CE20	1	1	1	EE10505010	Electrolytic Cap., 1μF ±20% 50V
CE21	1	1	1	EE33505010	Electrolytic Cap., 33μF ±20% 50V
CE22	1	1	1	EE33505010	Electrolytic Cap., 33μF ±20% 50V
CE23	1	1	1	EQ10505010	Electrolytic Cap., 1μF ±30% 50V
CE24	1	1	1	EQ10505010	Electrolytic Cap., 1μF ±30% 50V
CE25	1	1	1	EA22703590	Electrolytic Cap., 220μF +100 −10 % 35V
HE01	1	1	1	HT313283A0	Transistor, 2SC1328 S,T,U
HE02	1	1	1	HT313283A0	Transistor, 2SC1328 S,T,U
HE03	1	1	1	HT107222A0	Transistor, 2SA 722 S,T
HE04	1	1	1	HT107222A0	Transistor, 2SA 722 S,T
HE05	1	1	1	HT313283A0	Transistor, 2SC1328 S,T,U
HE06	1	1	1	HT313283A0	Transistor, 2SC1328 S,T,U
HE07	1	1	1	HT107222A0	Transistor, 2SA 722 S,T
HE08	1	1	1	HT107222A0	Transistor, 2SA 722 S,T
JE01 ~ JE08	8	8	8	YP10001130	Plug

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
					PH01 FILTER, DOLBY BOARD
PH01	1	1		YD29151090	P.W. Board
	1	1		ZZ29153090	P.W. Board Assembly
RH01	1	1		RT05102140	Resistor, 1kΩ ±5% ¼W
RH02	1	1		RT05102140	Resistor, 1kΩ ±5% ¼W
RH04	1	1		RT05105140	Resistor, 1MΩ ±5% ¼W
RH05	1	1		RT05105140	Resistor, 1MΩ ±5% ¼W
RH06	1	1		RT05472140	Resistor, 4.7kΩ ±5% ¼W
RH07	1	1		RT05472140	Resistor, 4.7kΩ ±5% ¼W
RH08	1	1		RT05225140	Resistor, 2.2MΩ ±5% ¼W
RH09	1	1		RT05225140	Resistor, 2.2MΩ ±5% ¼W
CH01	1	1		DF15222050	Film Cap., 0.0022μF ±10% 50V
CH02	1	1		DF15222050	Film Cap., 0.0022μF ±10% 50V
CH03	1	1		DF16682050	Film Cap., 0.0068μF ±10% 50V
CH04	1	1		DF16682050	Film Cap., 0.0068μF ±10% 50V
CH05	1	1		EV22403510	Electrolytic Cap., 0.22μF ±20% 35V
CH06	1	1		EV22403510	Electrolytic Cap., 0.22μF ±20% 35V
SH01	1	1		SP04040140	Push Switch
JH28	1	1		YP10001200	Plug
JH01 ~ JH18	18	18		YP10001200	Plug
JH19	1	1		YP10001200	Plug
JH20 ~ JH27	8	8		YP10001200	Plug
					PT01 MAIN, REMOTE BOARD
PT01	1	1	1	YD29151100	P.W. Board
	1	1	1	ZZ29153100	P.W. Board Assembly
PT07	4	4	4	3444118050	Spacer
RT01	1	1	1	RT05683140	Resistor, 68kΩ ±5% ¼W
RT02	1	1	1	RT05683140	Resistor, 68kΩ ±5% ¼W
RT03	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
RT04	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
RT05	1	1	1	GJ05331020	Resistor, 330Ω ±5% 2W
RT06	1	1	1	GJ05331020	Resistor, 330Ω ±5% 2W
RT07	1	1	1	GU05151120	Resistor, 150Ω ±5% ½W
RT08	1	1	1	GU05151120	Resistor, 150Ω ±5% ½W
CT01	1	1	1	DD16121010	Ceramic Cap., 120pF ±10% 50V
CT02	1	1	1	DD16121010	Ceramic Cap., 120pF ±10% 50V
CT03	1	1	1	DF16273050	Film Cap., 0.027μF ±10% 50V
CT04	1	1	1	DF16273050	Film Cap., 0.027μF ±10% 50V
ST01	1	1	1	SP04040110	Push Switch
JT01 ~ JT16	16	16	16	YP10001200	Plug
R002	1	1	1	RM02540220	Variable Resistor, Volume
S001	1	1	1	SR09050090	Rotary Switch, Selector
R004	1	1	1	GF05330120	Resistor, 33Ω ±5% ½W
R001	1	1	1	RS05040040	Variable Resistor, Balance
7216	1	1	1	2958302010	Dial
7220	1	1	1	2856107010	Sheet
7302	1	1	1	1210005010	Clamper
7304	1	1	1	1210005010	Clamper

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
7306	2	2	2	2821005010	Clamper
J003	1	1	1	YL01020030	Terminal
L004	1	1	1	LB30075260	Balun Coil
J020			1	BY03110010	Terminal
7602	4	4	4	2932057010	Leg
7603	4	4	4	5144041059	P.H.M. Screw S, P4 x 10
7605	1	1	1	51570306B0	P.H. Tapped Screw, P3 x 6
7608	1	1	1	2886861010	Label, on Transformer
7611	1	1	1	9510221010	Label, Fuse Caution
7612		1		9510611140	Label, "3A 250V"
7617	6	6	6	5110306S9	B.H.M. Screw, B3 x 6
7619			2	51100308S9	B.H.M. Screw, B3 x 8
7622	1	1	1	2958105502	Chassis, K
7625	4	4	4	2851101010	Support
7626	2	2	2	2942120010	Insulator
7627	2	2	2	2958005020	Clamper
7628	4	4	4	54020401A0	Flat Washer, P
7629	4	4	4	54040402A0	Spring Washer
7630	4	4	4	53110403A9	Hexagon Nut
7632			1	62030039W0	Lug
7633			1	51570306B0	P.H. Tapped Screw, P3 x 6
7634	4	4	4	51570306S0	P.H. Tapped Screw, P3 x 6
7702	4	4	4	51100306S9	B.H.M. Screw, B3 x 6
7703	16	16	16	51570306S0	P.H. Tapped Screw, P3 x 6
7704	2	2		51570306S0	B.H. Tapped Screw, B3 x 6
7706	1	1	1	51570306B0	P.H. Tapped Screw, P3 x 6
7707	1	1	1	62030049W0	Lug
7709	10	10	10	51570305B0	P.H. Tapped Screw, P3 x 5
7712	2	2	2	2886005030	Clamper
7713	4	4	4	2886005020	Clamper
7714	3	3	3	2886005050	Clamper
7715	1	1	1	2886005060	Clamper
7718			1	2934053010	Cover
7719			2	51570306B0	P.H. Tapped Screw, P3 x 6
7720	1	1	1	2915160093	Bracket
7721	1	1	1	51600306B0	P.H. Tapped Screw, P3 x 6
7723	2	2	2	51570306B0	P.H. Tapped Screw, P3 x 6
7729	1	1	1	51600306B0	P.H. Tapped Screw, P3 x 6
7733	1	1	1	51570306B0	P.H. Tapped Screw, P3 x 6
7802	4	4	4	51570306B0	P.H. Tapped Screw, P3 x 6
7804	1	1	1	2908259010	Bushing
7805	1	1	1	2927160050	Bracket
7806	1	1	1	51570306B0	P.H. Tapped Screw, P3 x 6
7809	1	1	1	51570306B0	P.H. Tapped Screw, P3 x 6
7811	1	1	1	51570306B0	P.H. Tapped Screw, P3 x 6
7823	1	1	1	2915262502	Pulley, K
7828	2	2	2	51100306A9	B.H.M. Screw, B3 x 6
7830	1	1	1	2958262500	Pulley, K
J007	1	1	1	YL01050020	Terminal
C003	1	1	1	EC68804010	Electrolytic Cap., 6800μF 40V
C004	1	1	1	EC68804010	Electrolytic Cap., 6800μF 40V
L005	1	1		TS19602230	Power Transformer
L005			1	TS19602250	Power Transformer

U: For U.S.A.
C: For Canada
E: For Europe

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
F801	1	1		FS10100080	Fuse, 1A
F802	1	1		FS10200060	Fuse, 2A
F801			1	FS10100800	Fuse, 1A
F802			1	FS10200800	Fuse, 2A
					PH01 FILTER BOARD
PH01			1	YD29150050	P.W. Board
			1	ZZ29150050	P.W. Board Assembly
RH01			1	RT05102140	Resistor, 1kΩ ±5% ¼W
RH02			1	RT05102140	Resistor, 1kΩ ±5% ¼W
RH04			1	RT05105140	Resistor, 1MΩ ±5% ¼W
RH05			1	RT05105140	Resistor, 1MΩ ±5% ¼W
RH06			1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
RH07			1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
RH08			1	RT05225140	Resistor, 2.2MΩ ±5% ¼W
RH09			1	RT05225140	Resistor, 2.2MΩ ±5% ¼W
CH01			1	DF16333050	Film Cap., 0.033μF ±10% 50V
CH02			1	DF16333050	Film Cap., 0.033μF ±10% 50V
CH03			1	DF16682050	Film Cap., 0.0068μF ±10% 50V
CH04			1	DF16682050	Film Cap., 0.0068μF ±10% 50V
SH01			1	SP04040130	Push Switch
JH01 ≀ JH17			17	YP10001200	Plug
8006	4	4	4	51480406S9	B.H.M. Screw F, B4 x 6
8007	10	10	10	51100406S9	B.H.M. Screw, B4 x 6
8008	1	1	1	2958056010	Buffer
8025	1	1	1	2578861010	Label, UL Caution
8026	1	1	1	2932861010	Label, "Do not remove..."
8028	1	1	1	2506265060	Indicator, "Do not use as handle..."
8033		1		9510911010	Label, LL No.
8035	1			9510911020	Label, UL Factory Code
8102	4	4	4	52017039J0	H. Head Bolt
8110	1	1	1	2916055010	Collar
8114	8	8	8	2886154030	Knob
8116	1	1	1	2904154040	Knob
8117	1	1	1	2850154010	Knob
8118	5	5	5	2959154010	Knob
8122	1			2222265010	Indicator
8123		1		2222265022	Indicator
8124			1	2222265032	Indicator
8131	2	2	2	51100306S9	B.H.M. Screw, B3 x 6
8202	1			9511101020	Label, UL
8209	1	1	1	2850112020	Shaft
8210	1	1	1	54040402H0	Spring Washer
8214	1	1	1	56332040G0	Eyelet
8217	1	1	1	2915269012	Protector
8218	2	2	2	51570305B0	P.H. Tapped Screw, P3 x 5
8223	4			9522815010	Serial No. Card
8224		4		9523015120	Serial No. Card
8225			4	9523015110	Serial No. Card
8302	1			2222851010	Instructions, Set
8303		1	1	2222851310	Instructions, Set
8308		1		2886851100	Instructions, FlySheet

REF. DESIG.	Q'TY U	C	E	PART NO.	DESCRIPTION
8309		1		2915851100	Instructions, FlySheet
8311	1	1		2222856010	Schematic
8312			1	2222856020	Schematic
8319	1			2818851040	Instructions, Packing
8320		1	1	2818851140	Instructions, Caution
8326		1	1	2818851120	Instructions, Important Card
8327		1		2818854040	Guarantee Card
8328	1			2577854012	Guarantee Card
8329	1			2577851020	Instructions, Red Tag
8330	1			2577813010	Envelope
8331		1		2918813010	Envelope
8332	1			2818854020	Guarantee Card
8333		1		9650000050	Service Station Card
8335		1	1	9630000180	Guarantee Card
8402	1	1	1	ZA02000070	Ext. Antenna
8502			1	2818813010	Envelope
8513	1	1	1	2222801010	Packing Case, Inner
8514	1	1	1	2222801110	Packing Case, Outer
8519	1	1	1	2818803040	Cushion
8520	1	1	1	2818803050	Cushion
8523	1	1	1	9014838380	Polyethylene Bag, Set
8525	1	1	1	9013025010	Polyethylene Bag, Printed Matter
8526	1	1	1	9013025010	Polyethylene Bag, Accessories
8528	1	1	1	1029804010	Sleeve
8529			1	9560000042	Hang Tag
8530	1	1	1	2731821010	Silicagel
8531	1	1	1	2819056010	Buffer
8532	1	1	1	2918107130	Sheet
8534		2		9510901020	Label

18. TECHNICAL SPECIFICATIONS

POWER AMPLIFIER SECTION:

RATED POWER OUTPUT ..... 30 WATTS PER CHANNEL, CONTINUOUS AVERAGE POWER, BOTH CHANNELS DRIVEN.
POWER BAND ..... 20 Hz to 20 kHz
TOTAL HARMONIC DISTORTION 0.3%
LOAD IMPEDANCE ..... 8 or 4 OHMS

Intermodulation Distortion 0.5%
(IHF method, 60 and 7,000 Hz mixed 4:1)
Frequency Response (from high level inputs) ..... 20 Hz to 20 kHz ±1.0 dB
Damping Factor 45

PREAMPLIFIER SECTION:

High Level:
Input Sensitivity and Impedance ..... 180 mV
80 kΩ

PHONO:

Input Overload @ 1 kHz ..... 100 mV
Equivalent Input Noise (RMS, 20 Hz to 20 kHz) ..... 2.2 μV
Dynamic Range (ratio of input overload voltage (at 1 kHz) to equivalent input noise) ..... 93 dB
Sensitivity and Impedance ..... 1.8 mV
47 kΩ

FM TUNER SECTION:

IHF Usable Sensitivity ..... 2.2 μV

Quieting Slope:

Stereo	35 dB @	10 μV
	50 dB @	50 μV
	56 dB @	100 μV
	64 dB @	1,000 μV
Mono	30 dB @	2 μV
	50 dB @	5 μV
	58 dB @	10 μV
	66 dB @	50 μV
	70 dB @	1,000 μV

Total Harmonic Distortion:
Mono 0.3%
Stereo 0.5%
Selectivity (Alternate Channel) ..... 50 dB
Capture Ratio ..... 2.5 dB
Stereo Separation at 1 kHz ..... 40 dB
Spurious Rejection ..... 90 dB
Image Rejection ..... 65 dB
IF Rejection ..... 85 dB
AM Suppression ..... 45 dB

AM TUNER SECTION:

Sensitivity	25 μV
Power Requirements	120 V AC, 50/60 Hz
At rated output, both channels operating (8 ohm loads)	150 Watts
Idling power (volume control at zero)	30 Watts

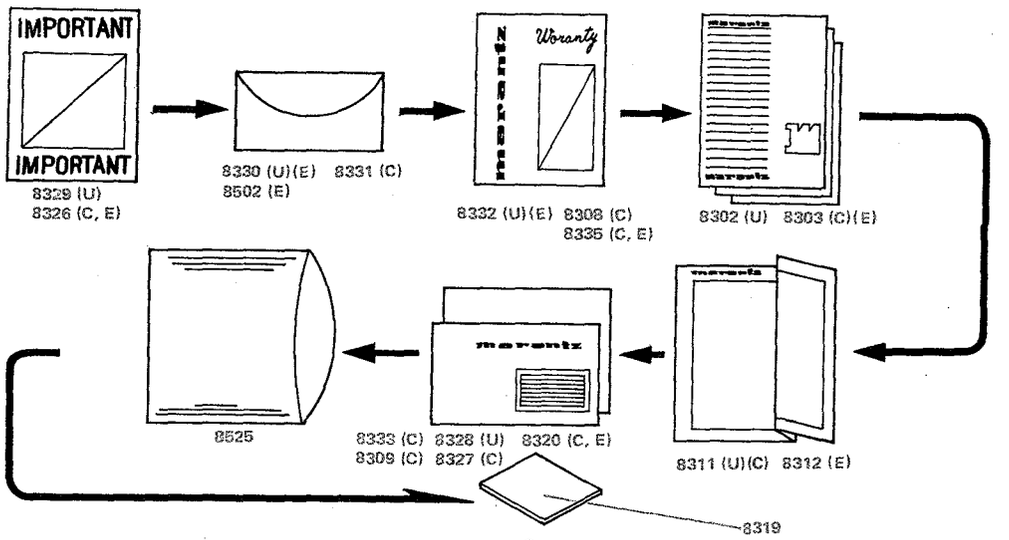
Dimensions:

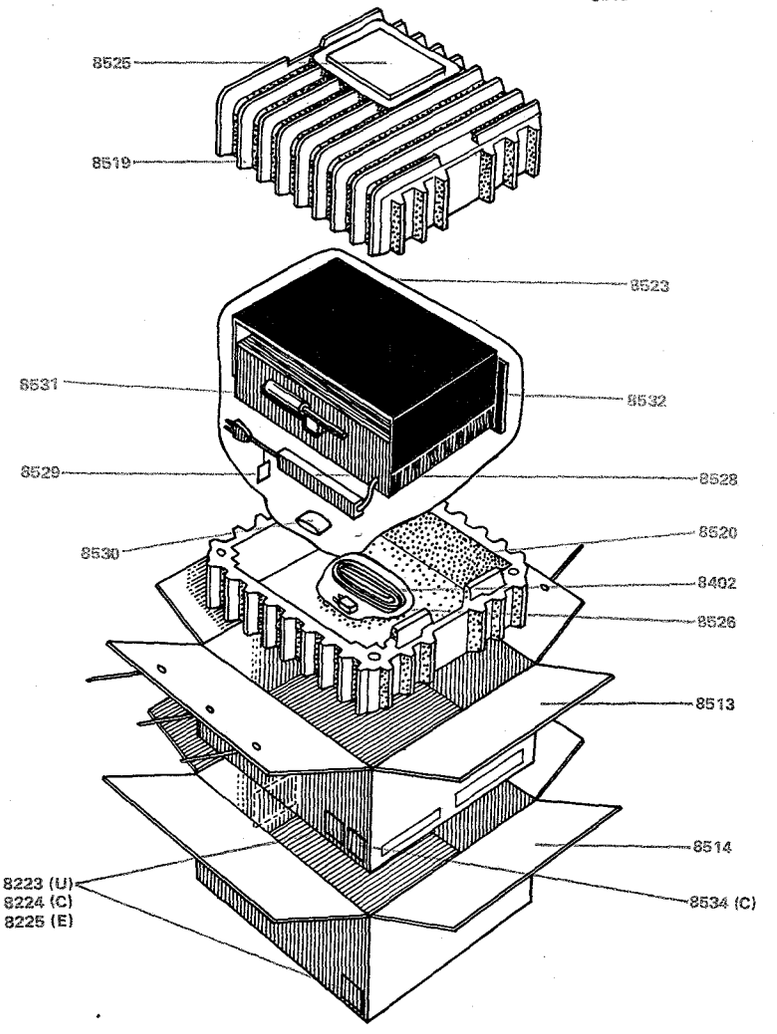
Panel Width	17-3/8 Inches
Panel Height	5-3/8 Inches
Depth	14 Inches

Weight:

Unit alone	26.5 lbs.
Packed for shipment	34.2 lbs.

19. PACKING MATERIAL EXPLODED VIEW





U: For U.S.A.
C: For Canada
E: For Europe

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SERVICE INFORMATION FOR EUROPEAN MODEL

The information contained herein includes technical specifications, major component locations, voltage conversion, FTZ regulation, schematic diagram and circuit diagram. For the alignment procedures, test equipment and reparing hints, refer to the original service manual.

TABLE OF CONTENTS

SECTION		PAGE
1.	TECHNICAL SPECIFICATIONS	42
2.	MAJOR COMPONENT LOCATIONS	43
	2.1 Front Panel Adjustment and Component Locations	43
	2.2 Rear Panel Adjustment and Component Locations	43
	2.3 Main Chassis Component Locations (Top View)	44
	2.4 Main Chassis Component Locations (Bottom View)	44
3.	VOLTAGE CONVERSION	45
	3.1 Voltage Conversion Chart	45
4.	FTZ REGULATION	45
5.	SCHEMATIC DIAGRAM	47
6.	CIRCUIT DIAGRAM	49

1. TECHNICAL SPECIFICATIONS

GENERAL

Power Requirements ..... 120 V ~, 60 Hz
(E versions are featuring an external voltage selector for use on 110/120/240 V. Other versions can be converted by a qualified technician to operate on 110/120/240 V.)

Power Consumption at rated output both channels operating ..... 160 Watts

Idling Power (volume control at zero) ..... 30 Watts

Dimensions:

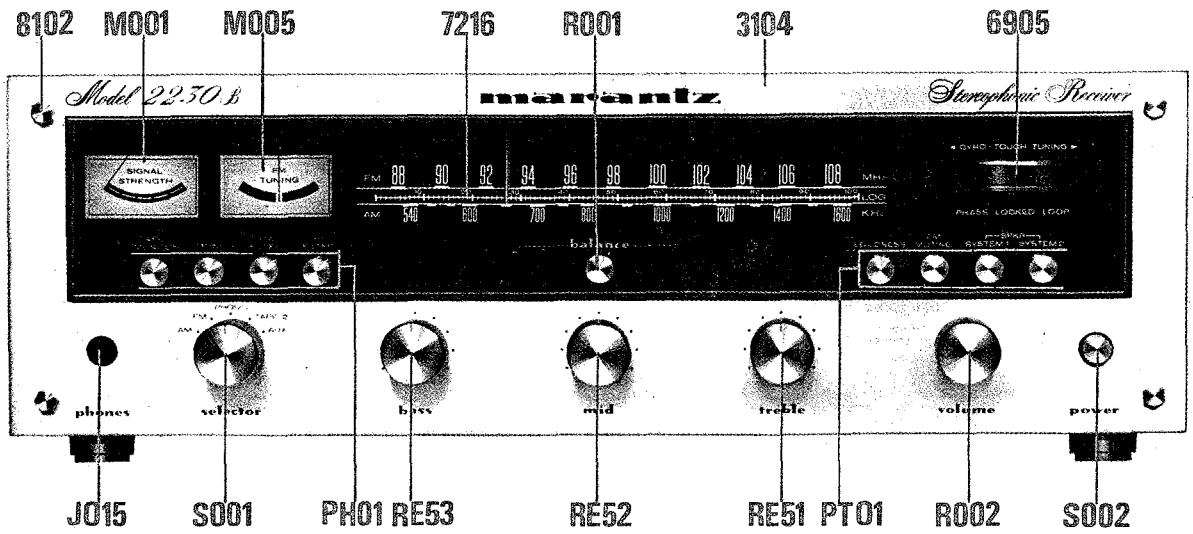
- Panel Width ..... 440 mm (17-3/8 inches)
- Panel Height ..... 137 mm (5-3/8 inches)
- Depth ..... 356 mm (14 inches)

Weight:

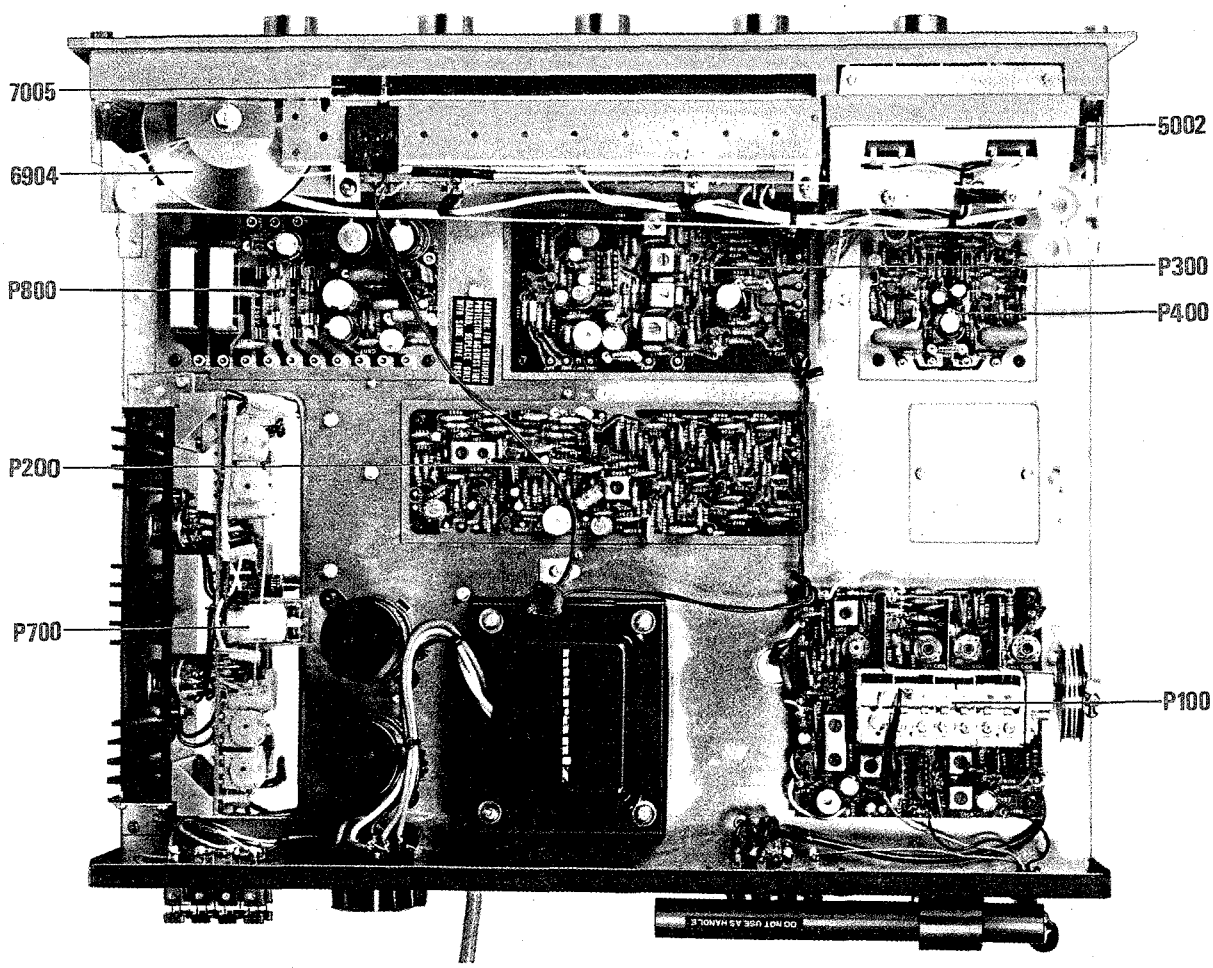
- Unit alone ..... 12.2 kg (26.5 lbs.)
- Packed for shipment ..... 15.5 kg (34.2 lbs.)

2. MAJOR COMPONENT LOCATIONS

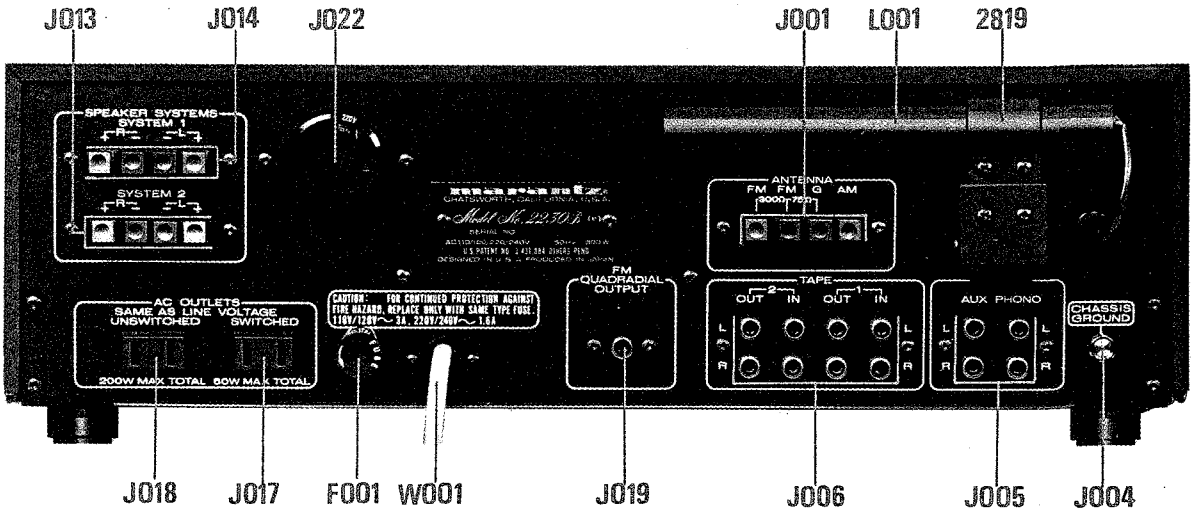
2.1 FRONT PANEL ADJUSTMENT AND COMPONENT LOCATIONS



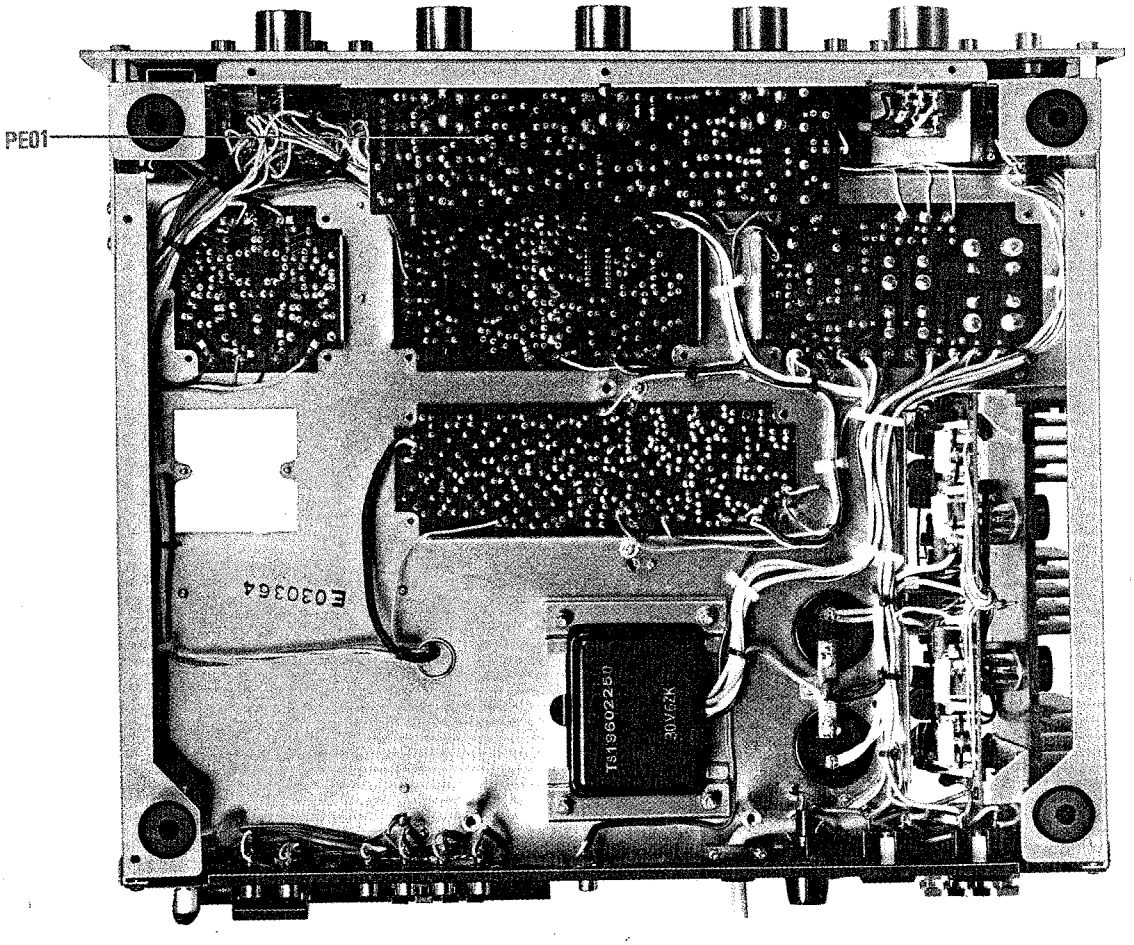
2.2 MAIN CHASSIS COMPONENT LOCATIONS (TOP VIEW)



2.3 REAR PANEL ADJUSTMENT AND COMPONENT LOCATIONS



2.4 MAIN CHASSIS COMPONENT LOCATIONS (BOTTOM VIEW)

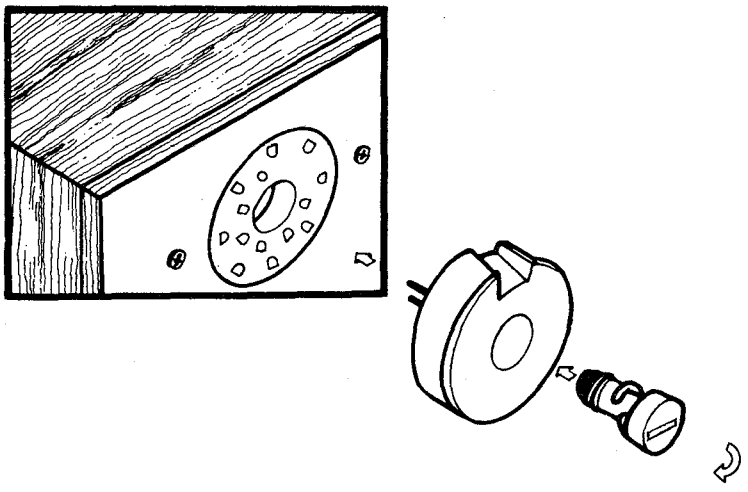


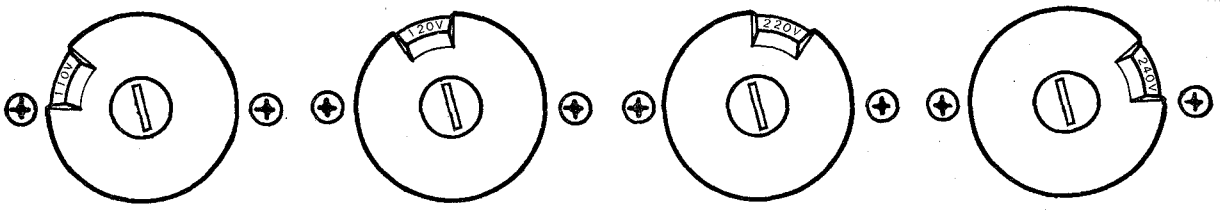
3. VOLTAGE CONVERSION

This Model is equipped with a universal power transformer to permit operation at 110, 120, 220 and 240V AC50/60Hz.
To convert the unit to the required voltage, set the plug as illustrated so that you can adjust the voltage as required.

CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

3.1 VOLTAGE CONVERSION CHART





For 110V Operation | For 120V Operation | For 220V Operation | For 240V Operation

4. FTZ REGULATION

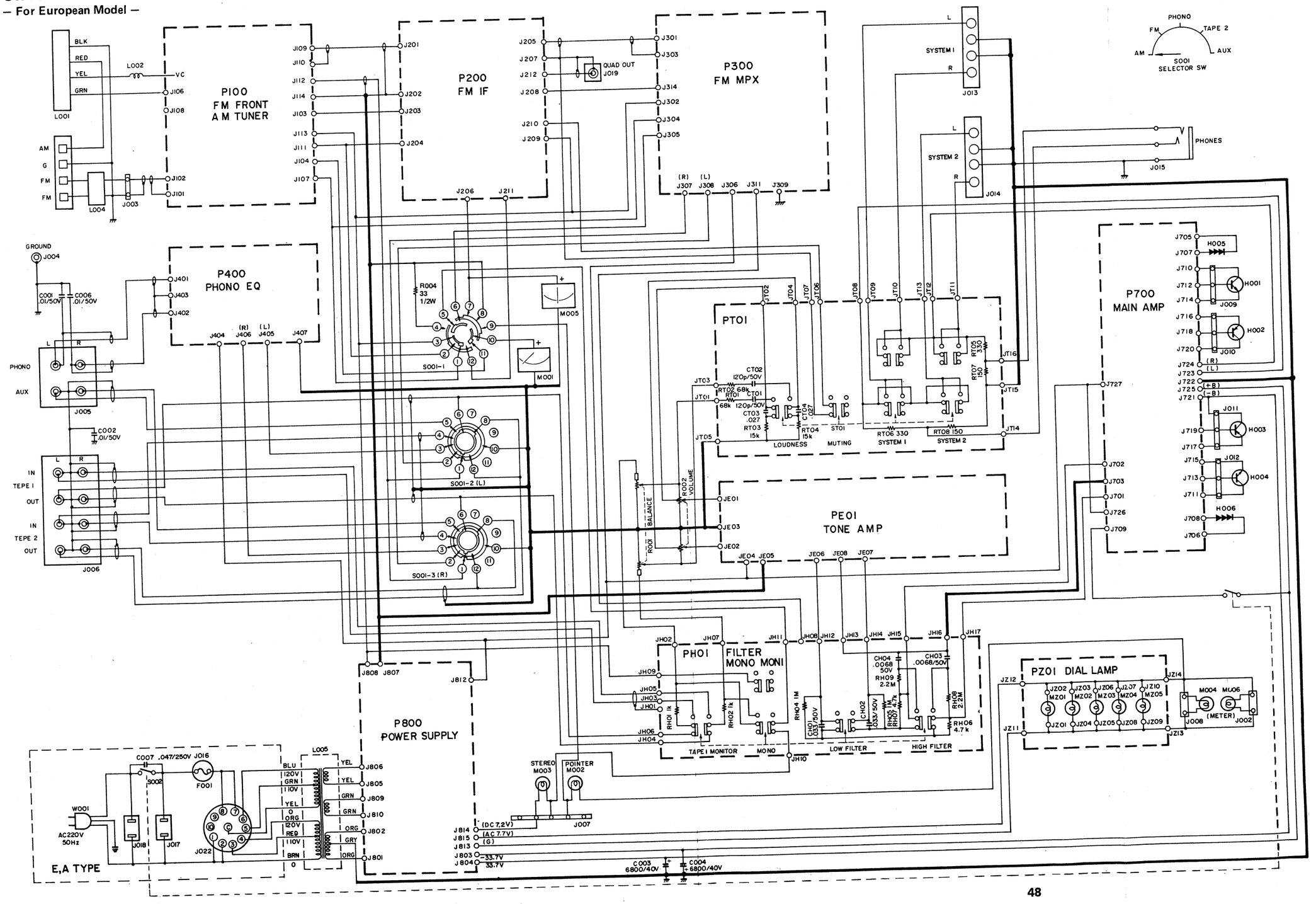
Instruction for the use in the range other than specified in FTZ codes

Achtung für die Leute, die in dem Gebiet wohnen, wo die FTZ-Bestimmungen vorherrschend sind.

Sollte das Gerät auch für Frequenzen auszerhalb des in den FTZ-Bestimmungen angegebenen Bereiches empfangebereit sein, bitten wir, den Bereich durch Nachstellen des Kernes in der Oszillatorspule (in der Abbildung mit „FTZ" gekennzeichnet) so zu korrigieren, dass er den Bestimmungen entspricht.

5. CIRCUIT DIAGRAM

– For European Model –



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6. CIRCUIT DIAGRAM

– For European Model –

Model 2230B